University of Alberta

Building Colleagues:
Learning Relationships in Physical Therapy Clinical Education

by

Jennifer Lynn Strohschein

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Science

Department of Physical Therapy

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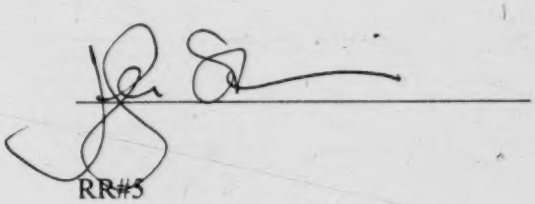

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January 22, 2003

There is, it seems to us,
At best, only a limited value
In the knowledge derived from experience.
The knowledge imposes a pattern and falsifies,
For the pattern is new in every moment
And every moment is a new and shocking
Valuation of all we have been…
The only wisdom we can hope to acquire
Is the wisdom of humility: humility is endless.

T. S. Eliot
Four Quartets

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Building Colleagues: Learning Relationships in Physical Therapy Clinical Education submitted by Jennifer Lynn Strohschein in partial fulfillment of the requirements of the degree of Master of Science.

Dr. Laura May

Dr. Paul Hagler

Dr. Vivien Hollis

January 17 2003

For Mom and Dad, Paul, Laura and Vivien, who have done so much to build my confidence and strength as a journeyer. For my friends: fellow travelers who have surrounded, supported and encouraged me on my journeys of mind, heart and spirit and who have been so patient with the fact that I have persistently taken the circuitous route. And for Jesus: vision, path and guide. Farther up and farther in!

ABSTRACT

This study explored learning relationships in physical therapy clinical education. A grounded theory approach was used to better understand physical therapists' and students' perceptions and practices in clinical education and to compare these to models and ideals of adult learning described in the literature. Data from focus groups, observation of clinical placements and interviews of therapists and students were collected from a small sample. A model of "Building Colleagues" was developed. Through the roles that are developed in the learning relationship, students' confidence as learners is either built up or broken down. The roles result from the nature and dynamic balance of the therapist's presence during treatment and the dialogue between therapist and student. Relationships of building confidence, hovering, abandoning and pretending were identified. This model demonstrates the need to set appropriate goals for learning processes and outcomes and to develop approaches that will build students' confidence as learners.

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I would like to thank my committee members, Dr. Paul Hagler, Dr. Laura May, and Dr. Vivien Hollis, for their support, guidance, challenges and trust. They have done much to help me develop as a learner. I also am deeply indebted to the participants who took the risk of sharing with me their experiences, passions, disappointments and hopes. I have been privileged to glimpse the minds and hearts of such gifted and caring people.

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CHAPTER 1
INTRODUCTION

Introduction to the thesis

Physical therapists practice in a health care environment that is increasingly complex and challenging. To be effective clinicians, they also must be effective learners.[1,2] While clinicians' learning begins in the professional program, it must continue throughout their professional careers, if they are to adequately address complex problems of practice.[3] Clinicians require self-awareness and the motivation to learn to engage in the self-directed learning[4] required for evidence-based, reflective practice.[2,5] Ideally, these skills and attitudes should be established early, through planned opportunities throughout the professional education. Clinical education is particularly well suited to such opportunities. In the complex clinical environment, students are confronted with problems of practice that could provide opportunities for significant learning. Not only do students need to develop clinical skills and knowledge, they also need to learn how to be learners in the clinical environment. Practicing clinicians who have committed to the role of clinical educator are in a unique place to support and guide students as they learn in this environment. The learning relationships developed between students and clinical educators, therefore, may play a significant role in the development of new professionals.

Statement of the problem

Despite the widely acknowledged importance of clinical education, little is known about learning relationships developed in physical therapy clinical education. Numerous models for clinical education, many of which incorporate principles of adult learning, have been proposed among the rehabilitation disciplines. It seems, however, that because many clinical educators tend to establish learning relationships that reflect their own experiences as students,[7] these theoretical models may not be widely utilized. Rather than following the models of self-directed, collaborative learning suggested in the literature,[5] therapists and students seem to adopt the traditional apprenticeship models of supervision in which learning is more passive and teacher-centered.[8] Such approaches could limit acquisition of the attitudes and skills such as reflection and self-directed learning that students require for effective lifelong learning. However, little empirical research has been done to explore clinical education practices. As a result, the learning

relationships that are developed within physical therapy clinical education are not well understood. A better understanding of the learning relationships within clinical education could have a number of benefits. It could provide a basis for individual reflection and for professional dialogue, which could lead to ongoing improvement of the process. A clearer understanding of clinical education practices could inform the setting of goals and evaluating of processes and outcomes in clinical education. A comparison of clinical education practices with adult learning ideals could indicate specific ways in which the theory of clinical education could better inform its practices.

Aims of the study

The purpose of this project was to develop a conceptual model of learning relationships established in physical therapy clinical education. The questions that guided the research process were these:

- How do clinical educators and students perceive the learning relationships that are developed between them in the physical therapy clinical education setting?
- What characterizes these relationships in practice?

Overview

A qualitative approach was used to address the research questions. A grounded theory approach was chosen as the most appropriate method to explore complex processes[8,9] within learning relationships in physical therapy clinical education.

The thesis is presented in a nontraditional, paper-based format. Chapter 2 contains a literature review in which clinical education needs are identified, some of the existing models and tools are described, and areas requiring further research are synthesized. Chapter 3 reports the results of the research. Chapter 4 reflects on the first author's process of learning the grounded theory approach. Chapter 5 summarizes these three articles and discusses implications, dissemination, and possibilities for future research.

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CHAPTER 2
ASSESSING THE NEED FOR CHANGE IN CLINICAL EDUCATION PRACTICES[1]

Introduction

Physical therapists work in a health care climate of increasing complexity and rapid change, of fiscal restraint and demands for accountability, of scrutiny from both internal and external sources. In such a climate, the ability to respond appropriately to these pressures is critical, not only for professional growth but for professional survival. New generations of physical therapists emerging from professional programs require more than a solid foundation of clinical skills. They require a foundation that is reinforced with attitudes and skills that will enable them to build their profession as well as their own professional practice. These attitudes and skills include the desire to engage in lifelong learning and professional growth and an ability to identify and critically evaluate their own practice and the underlying theories and perceptions that inform the practice of physical therapy.[1]

Clinical education, in which students engage in learning in the context of clinical practice, is arguably the best area in which such skills and attitudes can be taught and refined. Through a consistent and effective approach to the clinical education process, it is possible to significantly influence the formation of these attitudes and skills and, by doing so, impact the future of the profession. This paper will explore several aspects of the clinical education process, including identified needs and proposed models of clinical education. The primary focus of the review will be the literature in physical therapy, but valuable contributions and perspectives from occupational therapy, speech-language pathology and adult education also will be addressed. While critical analysis is not the focus of the discussion, reference will be made to the relative strength of the research studies cited. Critical appraisal is based on the checklist for primary research developed by Bury and Mead.[2] Position statements and anecdotal information characterize much of the literature in this area. These do not lend themselves to such formal ratings, but make

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[1] A version of this chapter has been published. Strohschein J, Hagler P, May L. *Physical Therapy*. 2002;82(2):160-172.

important contributions to our collective understanding of the clinical education process. The discussion concludes with implications for future clinical education research and practices in physical therapy.

Needs

A consistent and effective approach to clinical education requires a guiding philosophy that is clearly communicated, understood and embraced by all the groups and individuals involved in the clinical education process. Cranton and Kompf[3] addressed the dichotomy between adult education and health professions training, and recommended against developing educational philosophies for these disciplines in isolation. They contended that theory building for education in the health professions requires an interdisciplinary and holistic approach in order to fully address the needs of students as adult learners. This approach would involve consideration and inclusion of interdisciplinary perspectives from the various health professions, as well as adherence to foundational principles from cognitive psychology, developmental psychology and adult education.

Opacich,[4] from the perspective of occupational therapy, also affirmed the need for a carefully worded, clearly understood vision for the profession and its process of clinical education. An historical review of clinical education in occupational therapy highlighted the need for a continuity of professional vision to serve as a framework and a source of accountability in clinical education, particularly in a profession's dynamic process of change and development. She claimed that "the essential ingredient missing in the fieldwork solution is a well articulated educational philosophy that could link the tenets of occupational therapy with a viable, ideationally compatible fieldwork model", (p. 160). This same need exists in physical therapy.

Two studies have addressed the importance of non-technical skills. Higgs and colleagues briefly described an exploratory study from which they developed a list of fourteen goals of clinical education in the allied health professions.[1] The goals were derived first from the literature, then revised through two consecutive surveys of clinical educators in Sydney (90 participants) and Hong Kong (15 participants). The goals included the following: a) an awareness of health, holistic health care and the health care system; b) awareness of one's attitudes, values and responses to health and illness; c) a

broad understanding of the roles of the health care team; d) interpersonal skills and the ability to educate others effectively; e) ability to critically evaluate personal and professional practice; and f) accountability and commitment to continued development of competence and lifelong learning. Also included were specific clinical competencies such as clinical reasoning, psychomotor skills, assessment, treatment and evaluation, integration of theory and practice, and an ability to articulate appropriate rationales for treatment. The list of goals expressed a need to foster reflective practice and critical thinking, an increasing awareness of the complexities of clinical practice, and effectiveness in coping with these complexities. A strong qualitative study[5] further indicated the importance of non-technical competencies. Using the critical incident technique, the researchers explored some of the factors underlying inadequate clinical performance of students during their clinical experiences. Thirty-three clinical educators discussed specific incidents in which they had questioned the competence of students. Of the incidents described, more than half of the behaviors reflected inadequate non-technical skills such as poor communication and unprofessional behavior.

Schon,[6] in a foundational work on reflective practice and reflective practica, also discussed the need for developing non-technical competence. Schon spoke of the tension between rigor, or technical rationality, and relevance, found in acting in the complex, uncertain world of practice. He stated that the most important areas of professional practice lie beyond the commonly understood area of technical competence and stressed the need for artistry as well as technical excellence in practice. He articulated the need to challenge previous assumptions, to embrace uncertainty and ambiguity as opportunities to deepen and broaden learning, and to pursue a holistic grasp of the practice. In this approach, multiple perspectives and solutions to problems are valued. Schon's holistic, reflective approach to practice has been incorporated in much of the literature on clinical education,[7-11] but that perspective is reportedly adopted less consistently by clinical educators and students.[7,10] An absence of common philosophy for clinical education contributes to an inconsistency of approach to clinical supervision. Several strong descriptive studies comparing perceptions of physical therapy clinical education from the perspectives of students and clinical educators[12] and academic educators[13,14] revealed that stakeholders differ in some of their perceptions of appropriate roles and power sharing in

the supervisory relationship and of approaches to facilitating learning. Students may, therefore, fail to experience the continuity of approach in their practica that would optimize their acquisition of the attitudes and skills required for lifelong learning.

Contributing to this inconsistency of approach is inadequate preparation of clinicians for the important and complex role of clinical educator. Expertise in clinical practice does not imply expertise in clinical education. Many authors agree that specific preparation for assumption of this role is necessary.[8,14-16] Walker and Openshaw[17] surveyed one cohort of 22 physical therapy clinical educators and 43 students and described their responses. Because clinical educators lack formal education in this area, they tend to learn the role primarily by trial and error.[17] A recognized need for instruction in the clinical education process is being addressed in the US through the American Physical Therapy Association (APTA) Clinical Instructor Education and Credentialing Program.[18] In addition, the APTA has developed Guidelines and Self-assessments for Clinical Education to clarify roles, responsibilities and expectations, allowing both sites and clinicians to determine readiness for involvement in clinical education.[18] These voluntary programs may also address clinical educators' expressed desire for improved communication with academic teaching programs and other clinical educators.[17]

Cross,[15] in recognition of the critical role of clinical education in the development of competent and dynamic professionals, spoke of the need for quality assurance in clinical education. Cross explored various perspectives on quality, in which emphasis is placed either on the product of clinical education, as evidenced by training outcomes, or on the process of clinical education, as it relates to students learning to be effective learners. A process of quality assurance would be possible only with the adoption of a common underlying philosophy of clinical education and implementation of formal educational practices around the preparation of clinicians for assuming the role of clinical educators. An important example of the profession's readiness to develop more uniform practices in the area of clinical education is the recent development of Clinical Performance Instruments (CPIs) by the APTA for use in evaluation of physical therapy and physical therapy assistant students.[18]

Another concern expressed in the literature is that students and new practitioners often perceive an inconsistency between theory and practice.[10] They fail to make

connections between course work and field work, between different areas of practice, and between different forms of knowledge used in academic and clinical practice. Such separation of theory and practice may result from inadequate development of skills in reflection and theory-building within their placement settings.[10] This may reflect a limited awareness, on the part of both clinical educators and students, of the importance of reflection in identifying, analyzing and reworking theories to improve practice.

A practical need that is repeatedly identified in the literature is that of finding adequate resources for clinical education.[19-22] The current climate of health care, with growing fiscal and time constraints, creates a growing tension between provision of appropriate patient care and facilitation of excellent clinical education experiences for students. Specifically, there are some issues that may affect the willingness or ability of facilities or clinical educators to offer student placements. Funding cutbacks have resulted in site closures and staff layoffs. Pervasive strict attention to cost efficiency in clinical facilities that have a service-only mandate (i.e., no education mandate) may discourage service providers from accepting the extra "burden" of student placements. Of course, there is mounting evidence to suggest that students are not a service liability,[20,23-26] but many administrators and clinicians still perceive them to detract from the amount and quality of care. As programs in the US and Canada move towards graduate degree entry level, there may be some apprehension on the part of clinical educators with an undergraduate degree who are expected to provide supervision for graduate students. Clarification regarding reimbursement for student services is forthcoming, however the recommended interim management strategies[18] may not alleviate a potential shortfall of placement opportunities. Limitations in site participation, staffing, administrative policy, staff time, staff attitudes, and reimbursement practices necessitate creative and innovative approaches to accommodate and benefit students while maintaining acceptable levels of productivity and quality of care.

According to the literature there are numerous philosophical and practical needs to be studied and addressed in the critical area of clinical education. One need is for a common philosophy of clinical education, encompassing both the process and the product of the clinical education experience. A second need is to develop a commitment to ongoing reflective practice and lifelong learning among entry-level therapists. Also,

there is a need for greater consistency in the approach to establishing mutually beneficial supervisor/student relationships throughout the clinical education process. Additionally, clinicians have expressed the need for formal preparation and training to more adequately fill the role of clinical educator. A fifth need is for a process of quality assurance in clinical education to assess and, if necessary, enhance the consistency and effectiveness of the clinical education process. A sixth need is for greater emphasis on facilitating the connection of theory and practice in the clinical education setting. Finally, there is a need to effectively accommodate students in a health care environment of increasingly limited resources.

Models

The literature contains descriptions of models for clinical education and of more specific methods and tools to enhance implementation of an effective clinical education process. Collectively, these models address many of the needs previously discussed. Individually, they are limited in their ability to meet the diversity of needs. A comparative overview of the needs met by these models is presented in Table 2-1. The following discussion will explore ten models and methods for clinical education as described in the literature and address their potential for meeting the needs identified within physical therapy clinical education. Discipline-specific models will be discussed first, followed by transdisciplinary and interdisciplinary models.

Collaborative model

Several strong studies were conducted that explore the process and outcomes of collaborative placements in physical therapy clinical education. DeClute and Ladyshewsky[19] provided a thorough overview of collaborative placements. These are placements in which two or more students are supervised concurrently by a single clinician. The clinician delegates most or all of his or her caseload to the students and devotes time to facilitation of learning among the students.[19] The rationale for such placements is multifaceted. The limited availability of placement sites makes this option an appealing one, as more students can be accommodated. Skills of teamwork and collaboration can be effectively developed. Effective learning also seems to be enhanced in collaborative placements. A retrospective study[19] compared 38 matched pairs of students in traditional and collaborative placements and found significantly higher

outcomes in standardized clinical competence evaluation scores among students involved in the collaborative placements. The authors suggested that reasons for this difference included the benefits of peer learning, in which the safety and stimulation of consistent interaction with peers allowed for improved problem-solving, self-esteem and a positive attitude towards learning. A small retrospective study[20] compared patient care productivity for clinicians with no students, one student and more than one student, and learning outcomes between students in traditional and collaborative placements. Productivity during the clinical placements was higher than when no students were present. No significant differences in productivity were apparent between the one-student and two-student models. The researchers also reported higher learning outcomes with collaborative placements. Students in the collaborative placements rated their opportunities to discuss theory and practice and the adequacy of their learning experiences more positively than did the students in traditional placements. By contrast, clinical educators' evaluations of the learning and teaching process were lower for the collaborative than for the individual placements. The authors suggested that this may reflect a preference for a more traditional approach and uncertainty with an unfamiliar process. There has been some discussion[27] of situations in which more than two students are supervised concurrently by a single clinician, however the efficacy of those situations has not been thoroughly studied.

In a qualitative field study of three collaborative placements,[28] factors that enhanced or interfered with collaborative placements were identified through limited observation, one-time interviews and students' journals. Positive aspects of these placements included enhanced communication and learning as peers interacted and collaborated. Clinical educators experienced less stress than with traditional placements and developed their clinical knowledge and management skills. Disadvantages included decreased individual time and attention for students, potential for negative interpersonal dynamics between the students, and difficulty with differing skill and knowledge levels. The authors made several suggestions as a result of their study. Caseloads should be carefully graded and should combine collaboration between students as well as independent treatment. If possible, students should be paired according to similarity in

experience. Other staff in the area should be prepared to assist with managing the caseload at the beginning of the placement and upon its completion.

A collaborative model of clinical education therefore addresses the following needs. It allows more students to be accommodated in clinical sites and increases productivity at these sites. It reportedly enhances both the process and product of clinical education through the increased dialogue and reflection made possible by the presence of peers, thus contributing to skills for lifelong learning. Connection of theory and practice may be facilitated through this communication and reflection. The collaborative model of clinical education seems particularly promising in its potential to effectively address a number of the needs identified in the literature.

Mastery pathway framework

The development and implementation of a framework for guiding, monitoring and evaluating clinical competence in the context of clinical education was described by Oldmeadow.[29] The rationale for development of the framework was twofold: to assist clinicians with organization and efficiency of the clinical education process and to improve consistency and reliability of assessment. The framework employed principles of progressive mastery, individual pacing and part-to-whole sequencing. It was established on the basis of guidelines that had been developed by two national bodies of physiotherapy in Australia. These guidelines aimed to define standards of competency in new graduates.

Progress from dependent to independent practice is monitored and evaluated in five areas of the SOAPE system, which, when adapted for this purpose, involve the following: Subjective, Objective, Analysis, Action, Plan, and Education. These, with the exception of Analysis, are further divided into cognitive, manual and affective components, each of which is clearly defined. A grid pathway visually depicts areas of progress and of weakness. Evaluation of competence is done on a weekly basis after the midpoint of the placement, with scores in each category allocated from a range of zero for maximum supervision to five for proficient independence. The stages of progressive mastery are defined, beginning at novice, and progressing through the stages of advanced beginner, competent practice, proficient and expert. Progression involves not only increasing independence in practice but also improved flexibility, ability to analyze and

problem-solve through reflection and discussion, an increasingly holistic view of the clinical picture, and development of a proactive rather than a reactive stance to practice.

This method of work-based assessment addresses a number of the needs previously described. It is developed around a guiding philosophy and clearly defined goals. It allows increased consistency in approach and evaluation of clinical education. The framework helps to streamline the formal and informal evaluation process and to guide discussions and goal setting, thus addressing limitations of time. It also may help students to better bridge the theory/practice gap, through delineating and connecting the different aspects of clinical reasoning and practice. In addition the framework should enhance the ability to self-evaluate and reflect, which should in turn strengthen students' skills and attitudes for lifelong learning. The thorough evaluation form also could be utilized for quality assurance.

Problem-solving model

A method to improve the problem-solving abilities of physical therapy students was developed from the literature and clinical educator input, and its effectiveness was evaluated in a small pre-test post-test control group design.[30] The method consisted of an analytic questioning sequence that addressed patient assessment, problem identification and treatment planning. The Watson-Glaser Critical Thinking Appraisal (CTA) was used to determine effectiveness of the problem-solving model with sixteen first-year physical therapy students during their first clinical exposure. The CTA was reported to be reliable but may not have been valid for the researchers' purposes. Students were required to apply the questioning sequence to five prepared case studies and to a case with which they were actually involved during their clinical experience. The cases were discussed first with their clinical educator and later with peers. The clinical educators had been provided with strategies to assist students with effective use of the questioning sequence through facilitative questioning and discussion. Members of the control group only wrote individual case studies.

Quantitative analysis, which omitted three low outliers from the experimental group, failed to reveal a significant difference in CTA scores between the groups. Several factors may have contributed to this, including the fact that these were beginning students with limited clinical exposure, there was inadequate time to complete the follow-

up CTA and the CTA may not have been an appropriate instrument for this study. Feedback from students and clinical educators who used the analytical questioning model was positive, however. It was felt that the model was beneficial in promoting effective, logical problem solving. Increased discussion with the clinical educators was also identified as a positive aspect of the model.

This method facilitates the application of theory to practice through use of a structured framework. It helps students follow a logical sequence of data collection and hypothesis formation. The structure contributes to consistency of vision and approach. The focus is purely anticipatory, however, as the model fails to address reflection on the intervention and outcomes. These aspects would also need to be addressed in the context of the clinical setting, possibly with other tools such as interactive journals, which are used to develop, record and encourage dialogue about students' reflections.[11] Such tools promote an enhanced understanding of learning processes such as reflection and critical thinking, and help students and clinical educators identify learning needs.

Integrative model

Several authors described the process and benefits of intentional interaction between universities and clinics in the context of clinical education.[10,31] Three models were outlined in which the gap between theory and practice was perceived to be bridged by occupational therapy students' applied research in the context of a placement setting.[31] The primary model, developed at Dalhousie University, involved senior students in research through an extensive and thorough process. Clinicians first generated research questions and submitted them to the university. Students were provided with theoretical training in research and were then able to choose a research question that interested them. Their final clinical placements were held at the facility from which that particular question originated. Prior to this placement, they developed a proposal that was submitted for ethics review. Implementation of the study and collection of the data were done during the placement. Students were instructed to spend only twenty percent of the time in their placement in this capacity. Following completion of the placement, students analyzed and wrote up of the results of their study. The project culminated in a formal presentation of their research in conference format. While the descriptions of this model

were thorough and informative, evaluation of the effectiveness of this model in achieving the projected outcomes was not reported.

The implications of this model are substantial. As established and new practitioners engage together in the process of scientific inquiry, a changed approach to practice and research is facilitated. Through the process of research, students act as a bridge between theory and practice and between academic educators and clinicians. In that process they gain a deeper appreciation of the importance of research, the continuity of theory and practice, and a process for lifelong learning. A generation of students adequately equipped to be researching, critically reflecting practitioners and lifelong learners could strongly impact the culture and future of the profession.

Multiple mentoring model

A theoretical model of supervision was proposed that involved several clinicians in the course of a student's placement at a particular site.[22] This model expanded on the collaborative model previously described, in that two or more students were supervised by two or more clinicians. The rationale for such a model lies in the diverse needs of students as they develop clinical skills and professional attitudes and identities during their clinical education experience. According to the author, these needs are primarily met through the development of significant relationships. A mentoring relationship was defined as an interactive relationship between mentor and protégé in order to provide information, role-modeling, wisdom, and emotional support. The process was described as a complex one, requiring emotional commitment and considerable time and effort. The author also identified a continuum of peer relationships developed by students in their professional education. There are information peers, who are primary sources of information, collegial peers, who provide encouragement and support in both personal and professional areas, and special peers, with whom significant rapport and emotional connections are established.

These relationships may be developed with clinical educators and other clinicians at the site, as well as with academic faculty and peers. Because one individual cannot effectively fill all these roles, several individuals share the responsibility of mentoring several students. In this structure, clinicians assume a specific mentoring role in which they are particularly strong, either coordinating the overall process or sharing expertise in

an area of practice or theory. No single clinician has sole responsibility for the students' development. Students also are encouraged to establish meaningful peer relationships and to use each other as resources.

Clear communication and consistency among students and mentors is critical in such a model. Theoretically a learner-centered approach helps unify the diverse perspectives and approaches of different clinicians by focusing on the goals and learning needs of the students. Expectations for goals and processes in the placement must be clearly understood by both mentors and students. Regular meetings are necessary to facilitate such communication. One mentor would need to assume the major responsibility of overseeing the process. Tools such as learning contracts[32] and journals[7,11] could also contribute to communication and consistency.

There are benefits to this model for both the student and the mentors. Through intentional involvement with more clinicians and students during fieldwork, students would develop a wider diversity of relationships, experience a greater range of perspectives and approaches, identify appropriate role models, and benefit from the unique strengths and interests of a number of individuals. They would be better equipped to assume greater responsibility for their learning and seek out appropriate resources to meet their individual needs. This process should enhance skills and attitudes of lifelong learning. A learner-centered approach by the mentors also should lead to greater consistency in implementation of the clinical education process, but this would require adequate clinical educator training and support. Mentors would experience less stress from responsibility and time pressures and would be able to share their particular strengths and interests in the context of the mentoring relationship. This model would help make efficient use of potentially scarce resources of staffing and time through the flexibility and creativity inherent in the structure.

Continuum of supervision

A model of dynamic supervision for speech-language pathologists was proposed by Anderson.[33] She suggested that the supervisory relationship ideally should progress through three stages, moving from the evaluation-feedback stage, through the transitional stage to the self-supervision stage. The roles of supervisor and student should gradually change in identifiable and predictable ways with progression through these stages. At the

evaluation-feedback stage, when the student has little competence in a particular area, the educator assumes an active role of teaching, guiding and modeling, and the student takes on a more passive role while seeking to meet the educator's expectations. The goal at this stage is to move on as quickly as possible in order to encourage the student to become more actively involved in learning. The transitional stage involves a more collaborative process between educator and student as responsibility for decision-making is increasingly shared. Gradually, the supervisory relationship begins to approximate colleagueship. At the self-supervision stage, the student has become sufficiently independent to rely on the educator primarily for consultation. At this stage, the student effectively self-analyzes and seeks assistance and resources when appropriate. For the most part, educator and student interact as peers.

While most clinical educators affirm the need for a dynamic process in the supervisory relationship, studies have shown that the supervisory interactions that most consistently characterize clinical educators in speech-language pathology are the ones that typify supervisory behavior with students in the evaluation-feedback stage.[33] Some students may contribute to this phenomenon with their tendency to remain passive in the learning process. It is important to encourage students in their professional growth by encouraging them to assume increasing responsibility and ownership of their clinical experience. If clinical educators were aware of the need for such a dynamic process of supervision and were able to recognize their tendency to remain at the evaluation-feedback level, greater consistency and effectiveness in facilitating student learning should be possible. Students who were encouraged to engage in such a process of increasingly self-directed learning should develop skills for critical self-evaluation and lifelong learning. The framework has potential to enhance a common philosophy and approach to establishing the learning relationship; formal preparation of clinical educators could facilitate this.

Reflective model

Mandy[9] proposed a model of clinical education in speech-language pathology to emphasize the importance of intentional reflection in learning from experience. A structure was outlined in which the interaction between the student and clinical educator focuses on facilitating reflection to encourage a deep approach to learning. The intent of

the process was to encourage students to connect theory and practice and to engage in consistent and intentional self-evaluation and professional growth.

Two conceptual models were merged to form this reflective model: the "Goldhammer cycle" of supervision[34] and a reflective learning model.[35] Phases of the supervision cycle were described. A pre-observation conference is held, in which the intent is to establish an understanding of the supervisory model with its resultant roles and expectations, to identify and affirm previous experience, to discuss plans for client management, and to develop a relationship of mutual respect and trust. Observation of student-client interaction, in which the supervisor collects descriptive data, is the next phase. Analysis and strategy follows. Student and supervisor independently make notes on the session in preparation for later discussion of issues that arose from the session. The supervisor seeks to construct questions that will help the student reflect on the experience. Student and supervisor then meet for the supervision conference, in which the student revisits the experience and recalls both events and emotions. In turn, the events and emotions of the session are analyzed in terms of their impact. Negative emotions can inhibit effective learning and thus need to be recognized and dealt with; positive emotions can enhance learning and thus need to be recognized and affirmed. Re-evaluation of the experience follows. This involves the following progression: a) associating new knowledge and feelings with previously acquired knowledge and observations, b) integrating relationships between old and new knowledge to form hypotheses, c) validating these hypotheses by anticipating their practical application, and d) appropriating this new information into the student's working knowledge base. Boud and colleagues[35] state that this appropriation may not occur in every learning cycle but is likely to occur when the new learning is perceived by the learner as significant. It likely would not occur during the conference but would be more likely to occur by testing this new knowledge in the context of practice. Post-conference analysis is the last phase of the supervisory cycle. At this time, student and supervisor reflect on the cycle to determine whether the goals of process and learning were met.

The issue of time constraints in the clinical education setting was acknowledged by Mandy,[9] and she emphasized the importance of the quality of learning experiences rather than their quantity. The author suggested flexibility with the model, recognizing

that the level of the learner's experience and the learner's individualized goals would guide its application. Through the structure of this model, effective learning is not left to chance but is intentionally facilitated and enhanced. Students who have engaged in this process will have begun to learn the skills of reflection that will equip them to pursue professional careers of lifelong learning. The reflective process should facilitate the connection between theory and practice. The clear framework for the supervisory conference should increase the consistency of philosophy and approach to the learning process by clinical educators.

Educator-manager/self-directed learner

A conceptual, transdisciplinary model that encompasses the entire process of clinical education planning, implementation and evaluation was proposed by Higgs.[8,36] Higgs first described the roles of the clinical educator as manager and of the student as self-directed learner.[8] Based on principles of adult learning and self-directed learning, she emphasized the clinical educators' role as facilitator and manager of learning rather than as teacher. This facilitation is dynamic and individualized, depending on the student's "learner task maturity" or readiness for a particular task. When maturity is low, more structure for facilitation of learning is provided. As the learner demonstrates greater maturity and ability to be self-directed, there is increased opportunity for co-management, which encourages students to take greater responsibility for their learning. Interdependence rather than independence is facilitated by effective interaction among participants. She suggested that a collaborative model of clinical education could create opportunities for such group collaboration.

Higgs then presented a framework for the broader management of clinical education programs,[36] based on the CIPP model of management proposed by Stufflebeam.[37] This model addresses 1)context, the identified needs of the program, 2)input, the intended means of implementation of the program, 3)process, the actual means of implementation, and 4)product, the outcomes of the program. Through comprehensive goal-setting, monitoring and evaluation of clinical education, it would be possible to address the obstacles to developing a common philosophy among clinical educators. Such an understanding should enhance the consistency of approach by clinical educators and provide data from quality assurance measures to inform ongoing

improvement of the process. Students would develop skills and attitudes for lifelong, self-directed learning. Contribution from academic educators, clinical educators, students and professional bodies at all stages would be imperative to ensure consideration of the various perspectives and to enhance ownership of the process.

Coaching model

A transdisciplinary model of clinical supervision derived from business management was proposed by Hagler and McFarlane.[38] Use of the term "coach" rather than "supervisor" emphasizes the role of the clinical educator as facilitator of a process rather than monitor of minimal performance standards. Through the dynamic process of clinical education, the coach assumes various roles to appropriately assist the learner in becoming an "independent, creative, self-supervising learner" (p. 6). The five coaching roles are: educator, coach, sponsor, counselor and confronter. The first three roles are appropriate for clinical educators working with learners who are progressing normally toward professional competence. The latter two roles are appropriate for clinical educators working with learners who are off track and with whom the other three roles have failed.

Educating is the first role assumed by the clinical educator when interacting with learners who are new to a particular learning situation. An environment of affirmation and support is developed, the students' existing strengths and knowledge are identified and affirmed, and performance criteria for the placement are determined and clearly communicated. Emphasis at this stage is the acquisition of new skills. The second role is Coaching. Students begin taking more control of their learning once basic knowledge and skills are developed. Thoughtful questioning provides students with "a pathway to information" (p. 8) that strengthens their skills and develops attitudes that promote eventual autonomy in learning. Students are challenged to take risks; mistakes are allowed and are used as sources of deeper learning. As students begin to reveal exceptional strengths and skills and to demonstrate appropriate autonomy, the coach assumes the third role, Sponsoring. Opportunities for further growth are sought out, barriers for performance are identified and removed, and the unique contributions of the student within the setting are recognized and affirmed.

To deal effectively with problems that may arise during the course of a clinical education experience, the coach may need to assume two additional roles. Counseling is required when problems begin to interfere with the student's performance and educating has not alleviated these problems. The coach facilitates a meeting in which the issues and concerns are clearly identified and explored, goals and means for improvement are established, and a subsequent meeting is arranged to monitor progress. Communication skills and a positive, supportive environment are crucial for this process. Confronting is the second additional role that is necessary when both educating and counseling have failed. Decisive actions and deadlines are established and consequences determined in order to remove any uncertainty about expectations for performance and responsibility.

This model clearly outlines the roles of the clinical educator through the dynamic process of clinical education. It has the potential to contribute to improved consistency in philosophy and effectiveness of supervisory interactions through all stages of student development and growth. The model emphasizes a dynamic process of development towards self-directedness, thus encouraging students to develop skills in self-evaluation and professional growth. Additionally, this model addresses the possibility of problems developing during the course of a placement and provides strategies to deal with these. This focused approach to dealing with problems may help develop a sense of professional accountability in students who lack this.

Interdisciplinary model

The need to develop competence in interdisciplinary teamwork and reflective practice was addressed in an interdisciplinary model developed, implemented and studied by Cox and colleagues.[39] The authors developed and implemented an interdisciplinary clinical education pilot project based on an emerging need for a client-centered, interdisciplinary team approach and on literature regarding interdisciplinary clinical education. Nine students, from physical therapy, occupational therapy and speech-language pathology engaged in this interdisciplinary clinical education experience. The students were supervised by a member of their own discipline but also participated in interdisciplinary interactive modules. These were designed to increase their awareness of team roles and functions and to develop professional skills common to all the disciplines. Shadowing of another professional discipline was an additional component of the

experience. To assist in developing their reflective skills and to provide data for qualitative study of the project, each of the students was required to keep a structured journal.

Qualitative analysis of data from pre-placement questionnaires, mid-term and post-placement interviews, focus groups and the journals revealed a number of themes. It was perceived that clients benefited from a more holistic approach to treatment that resulted from students' improved interdisciplinary insights and understanding. Students believed that their professional development and communication skills were enhanced in the context of this placement. One disadvantage identified by the students was a loss of direct treatment time. Physical therapy students and supervisors in particular found this problematic. More time for development of technical skills was thought to be important. Journaling was perceived as tiresome and time-consuming. According to students, the discipline-specific assessments of clinical competence did not adequately address the important interdisciplinary and teamwork skills that were developed in this placement.

The clinical education experience provided by this model could help to develop skills in connecting theory and practice, in reflection and dialogue, and in effective collaboration with other members of the health care team. The authors emphasized the importance of developing skills in reflection to assist with self-evaluation and to promote significant learning from experience. Some of the more negative responses to this model indicated a resistance to designating the time necessary for such reflection. A strong emphasis on technical skills in professional education should not overshadow the development of the non-technical skills that enhance artistry in practice. Such an imbalance would be an inadequate foundation for practice in the dynamic complexity of the current health care climate.[6,40] The development of attitudes and skills for reflection should begin in an academic setting, then be further developed in the clinical education setting.[39,40] Such consistency in philosophy between academic and clinical education settings is an important factor in helping develop openness to reflective practice. The model of interdisciplinary placements provides an excellent structure to enhance development of holistic, reflective professionals with attitudes and skills that will enable them to pursue learning throughout their professional careers.

From these diverse models and methods, a number of themes arise. The theme of process within the clinical education experience is emphasized in the models of Mastery Pathway, the Continuum of Supervision, Reflective Practicum and Coaching. A focus on the development of non-technical competencies such as communication, collaboration and reflection is evident in the Collaborative, Reflective Practicum, Educator-manager / Self-directed Learner, and Interdisciplinary models. The theme of collaboration within the clinical education process arises frequently; this may involve multiple students, clinical educators, disciplines and clinics/universities. The Collaborative, Integrative, Multiple Mentor, Educator-manager / Self-directed Learner, and Interdisciplinary models reflect this theme. The importance of the roles established and relationships developed between clinical educators and students is acknowledged in the Multiple Mentor, Continuum of Supervision, Educator-manager / Self-directed Learner, and Coaching models. The Problem-solving model alone emphasizes the development of a cognitive process. The models thus address a wide range of important areas of need within the clinical education process.

Implications

The literature demonstrates that, while there are numerous needs to be addressed in the area of clinical education, a wide range of possibilities for meeting these needs exists. In fact, the choices could be overwhelming. How is one to choose the most effective approach to meet the challenges of clinical education? This choice might be made easier through the development of clear goals for clinical education and for the process to be followed in achieving these goals. Given clear objectives for the clinical education process and appropriate frameworks to guide progress, clinicians should be able to choose the models and tools that will allow them to achieve these goals within the unique context of their setting. It probably is desirable to have a number of models to trial and evaluate until we can determine which one is best suited to most situations.

It is our belief that the choices relevant to an effective approach for clinical education be considered within the context of professional education curriculum design. Professional programs can use the information presented to guide the development of activities that integrate the academic and clinical education experiences. It is possible that more than one model may inform the curriculum development choices, thereby ensuring

institutional autonomy. For example, aspects of the Integrative, Problem-solving, and Reflective models may help to define specific activities within the curriculum such as identifying the "best evidence" in support of treatment applied during the clinical placement or the involvement of clinicians as tutorial leaders. This type of curriculum integration also may serve to strengthen the partnership between professional programs and the Clinical Instructor Education and Credentialing Program. It is also possible that information from the self-assessments included in the APTA Guidelines for Clinical Education could inform curriculum development that would further enhance quality academic and clinical learning experiences.

Higgs' description of the CIPP model[36] provides a framework for analyzing clinical education needs, which then inform the selection of appropriate models. The *Context* evaluation of intended outcomes involves a process including all the stakeholders in clinical education: local and federal professional associations, clinicians, faculty members, and students. The *Input* or program design is identified from the context evaluation and could include the provision of a formal education process for clinical educators. The goals of clinical education are clearly communicated, and potential models and tools for accomplishing these goals are provided. This would allow not only for greater consistency in approach, but also would bring clinical educators together to allow for collaboration and mutual support. *Process* involves the monitoring of the actual implementation of the clinical education process. This is done both externally, through a formal evaluation of the process, and internally, through intentional reflection by the clinical educators and students. *Product* is assessed through a retrospective evaluation of the outcomes of clinical education to determine if the goals of process and product were achieved. Through such an intentional and focused approach to clinical education, the possibilities for excellence in clinical education and, subsequently in professional practice, would not be left to chance but would be nurtured and developed.

Needs for Research

There is a need to determine and clearly articulate specific goals to guide the development and evaluation of the clinical education process in physical therapy. Qualitative research to determine these goals and quantitative research to establish their generalizability and to test their efficacy are indicated.

The literature provides many excellent theoretical frameworks and practical suggestions to improve the clinical education process. To utilize these appropriately, however, it is necessary to clearly understand both the goals and the existing process of clinical education. Although there are a number of articles that report perceptions of the current process according to clinical educators, students and faculty members in physical therapy,[12-14] there is a paucity of formal research to identify and understand the processes presently occurring in clinical education. Perceptions of the current process may not reflect adequately all the important clinical education issues and processes articulated in the above models. A qualitative approach, such as grounded theory or focused ethnography, could be used to identify the most salient features of the current clinical education process. Research may focus on developing an understanding of such issues as the roles assumed and relationships developed by clinical educators and students, the degree to which the clinical education process is dynamic, the presence and effects of intentional reflection within the clinical education setting, and components of the learning process and learning outcomes. Once there is a clearer understanding of the present status of clinical education, strategies for improving the process can be suggested, implemented, and evaluated. For example, it will be feasible to develop tools with which to measure the important aspects such as the supervisory relationship; amount, type and style of student learning; and the impact of these on quality of service. Once we have developed measurement tools, it will be possible to assess the effects of experimental intervention. Experimental research will enable study of the impact of supervisory relationships and models on student learning and quality of care.

Summary

Collectively, the ten clinical education models described above offer many valuable guiding principles and potential ways of structuring the clinical education process in physical therapy. Unfortunately, none of them alone addresses all the needs of clinical education. In fact, without a clear understanding of the current status, the needs of the profession remain uncertain. There are many excellent clinical educators and positive clinical education experiences, but at present this may be due more to clinicians' intuition and natural abilities as educators than to their effective, consistent approach to the clinical education process. A combination of qualitative, descriptive and

experimental research can illuminate the multidimensional nature of the process. Findings will guide development of one or more models that satisfy the potentially unique needs of physical therapy clinical education while accommodating the diversities associated with dynamic factors such as personal and environmental contexts.

Table 2-1 Comparative overview of needs met by each model

Models	Needs						
	Common philosophy	**Lifelong learning**	**Consistency of learning relationship**	**Clinical educator preparation**	**Quality assurance**	**Theory to practice**	**Maximize resources**
Collaborative	0	2	0	0	0	2	2
Mastery pathway	2	2	2	2	2	1	2
Problem-solving	2	2	1	2	0	2	0
Integrative	0	2	0	2	0	2	1
Multiple Mentoring	0	2	0	0	0	0	2
Continuum	2	2	2	0	0	0	0
Reflective	2	2	2	0	0	2	0
Educator-manager/self-directed learner	2	2	2	1	2	0	0
Coaching	2	2	2	0	0	0	0
Interdisciplinary	2	2	0	2	0	2	0

Key:

0 = does not meet need
1 = attempts to meet need
2 = clearly meets need

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CHAPTER 3

BUILDING COLLEAGUES BY BUILDING CONFIDENCE: LEARNING RELATIONSHIPS IN PHYSICAL THERAPY CLINICAL EDUCATION

Introduction

Health care professionals practice in an environment that is complex and dynamic. To remain clinically effective in this environment, we need the ability and motivation to continue learning throughout our careers. As clinicians, our effectiveness as lifelong learners affects the quality of our practice, the extent of our professional growth and development, and cumulatively, the evolution of our profession. Appropriate confidence may be a key to our effectiveness as learners.[1] It is logical to assume that our confidence as learners is significantly affected by our professional education. The following discussion focuses on the clinical education component of physical therapy professional education and its role in the development of confidence.

Confidence in different forms of knowledge

In the clinical education context, students have the opportunity to develop confidence in the relationship between theory and practice[2-4] and to begin developing each of the forms of knowledge required for effective practice in the clinical context.[3-6] These include propositional knowledge, the formal knowledge of the profession; professional craft knowledge, the procedural, experiential and intuitive knowledge that is a product of clinical experience and is often unarticulated; and personal knowledge, the knowledge of self that is developed through experience and reflection.[4] This self-awareness is particularly important as it controls the acquisition and application of the other forms of knowledge.[7] Students need to gain confidence in the legitimacy of these different forms of knowledge if they are to develop their potential as learners.

Confidence in learning to learn

Even more than developing confidence in knowledge, students need to develop confidence in learning. Clinical education provides opportunities for students to gain confidence as learners. Such opportunities should include clinical reasoning, problem solving, reflection and self-directed learning.[8-11] These learning skills support the development of clinical competence and evidence-based practice. Confidence in learning

to learn in the clinical context establishes lifelong learning skills and facilitates professional development. Even experienced expert physical therapists are highly motivated learners who continue to actively develop their client-centered, multidimensional knowledge base.[12] When expertise is viewed not as a product but as a process of pursuing a career of continual learning,[7] students with the skills and motivation to actively learn also can begin an expert career. Experts learn by bringing their formal knowledge into complex problems of practice and thus developing their professional craft knowledge. They are guided and monitored in this process of progressive problem solving by their personal knowledge.[7] Experts are highly motivated learners.[7,12] Experienced non-experts, by contrast, avoid learning. In a process of problem reduction, they force-fit complex new problems into sometimes inadequate old solutions.[7] Thus, it is not experience alone but continual learning from experience that leads to an expert career. Students who develop confidence and skills as learners will be equipped to begin such a career.

Confidence in learning relationships

Relationships established within clinical education can play an important role in students' learning. Roles in the learning relationship have been the focus of a number of models discussed in the clinical education literature.[5,10,13-17] Collaborative relationships have been identified as a means of enhancing learning.[18-24] The importance of interpersonal factors within learning relationships, particularly the approachability and communication of clinical educators and the roles they assume, has been identified by students.[13,15,25-27]

Reflection has been identified as a core component of learning relationships in much of the clinical education[5,6,10,28] and adult learning literature.[1,2,29-32] It is believed that effective learning from experience is enhanced by critical reflection and dialogue.[1-3,11,30-32] In his foundational research in diverse practicum settings,[2] Schon identified two models of learning relationship, one that promotes reflection and one that inhibits it. A reflective Model II relationship is characterized by openness. Participants freely express their thought processes and uncertainties and use these for reflection and ongoing learning. This model encompasses a number of principles of self-directed learning: a) interdependence, in which learning is collaborative;[5] b) co-management of learning, in

which the student identifies learning goals and the therapist supports the student in accomplishing these;[5] and c) power sharing, characterized by mutual approachability, self-disclosure and respect.[10]

A Model I relationship, in contrast, is characterized by defensiveness. Participants remain closed and thus inhibit the reflection and dialogue that would stimulate learning.[2] Incongruent goals, expectations and attitudes may contribute to such a closed relationship. Students, academic teachers and clinical educators may have different goals for clinical education processes and outcomes.[15,25-27] Academic teachers tend to value an active adult learning approach, while therapists and students tend to favor a more passive apprenticeship model.[25-28] Even those students and therapists who advocate theories of self-directed learning and power sharing may not practice them in the clinical education context.[6,27,28,33] Therapists have indicated that problems of poor communication and unprofessional behavior are more difficult to address than problems of inadequate skill or knowledge.[34] These former problems may contribute to a Model I relationship.

The existing literature contains several gaps. Much of the clinical education literature addresses the question of how students *should* learn rather than how they actually *do* learn. There is little known about the learning processes that occur within learning relationships in clinical education and whether these are consistent with recommendations in the adult learning literature. Further, the current clinical education research has not yet produced a conceptual model of the clinical education process. The qualitative research discussed in this article sought to address these gaps.

Rationale for the study

The following is a description of the research process and the model that was developed in the context of the primary investigator's graduate degree. As a physical therapist who has been both a student and a clinical educator, I am particularly interested in learning in clinical education. I also am interested in the nature of adult learning and its importance in the development of dynamic professionals.

The questions that guided the research process were these: How do clinical educators and students perceive the learning relationships that are developed between

them in the physical therapy clinical education setting? What characterizes these relationships in practice?

Methods

Design

The research project followed a grounded theory approach.[35] Grounded theory research originates from the discipline of sociology and is appropriate for exploring social processes that are poorly understood.[35-37] Using a process of concurrent sampling, data collection and analysis, grounded theory aims to develop a conceptual theory through an inductive process.[35] The research proceeded in two phases: focus groups in the first phase and observation and interviews in the second. The first phase was designed to access therapists' and students' perceptions of the learning relationships developed during clinical placements. The second phase was designed to observe and discuss the actions of students and therapists in the clinical placement setting.

Participants

Tables 3-1 through 3-4 present profiles of the participants. All participants were affiliated with one university in western Canada. The sample obtained was a convenience rather than a theoretical sample due to a limited response to recruitment. Participants in the first phase reflected a range of experience, age, gender, and therapists' practice settings. Due to the small number of participants in the second phase, however, such diversity was not achieved. Nonetheless, the participants' thoughtful and articulate input, motivated by their interest in clinical education and desire to contribute to the profession, provided data of high quality.

Data collection

Phase I, focus groups. Once ethics approval was granted, pilot work was done to refine and clarify questions for the semi-structured focus group interviews. Questions were designed to stimulate and guide discussion of participants' experiences in clinical education learning relationships. The questions were kept consistent across focus groups, using probes to facilitate a more thorough exploration of ideas (Appendix A). Five focus groups were conducted, two with students and three with therapists. This separation of students and therapists was intended to minimize the power effects that may have been present with mixed groups. Four of the focus groups were held at the university and one

was conducted via videoconference, allowing simultaneous access to three remote rural sites. I conducted all the focus groups and later transcribed the recorded data. Informed consent was obtained from participants at the beginning of each focus group.

Phase II, non-participant observation and interviews. Two student/therapist pairs were observed throughout their respective five-week clinical placements, for two half days each week. Over the course of the placements, I observed orientation, treatment sessions, informal dialogue and formal evaluations. Following the midterm and final evaluations, therapist and student were each interviewed to clarify and expand on earlier observations. Concurrent data analysis was used to guide the observation and to develop the questions for the interviews. Consent was obtained from each of the participants prior to beginning data collection. Throughout the placement period, the therapists or students obtained consent from clients whose treatment sessions were observed, using a script provided for them. Field notes were recorded during each observation session and were later transcribed. Interviews were recorded and transcribed.

Data analysis

Data were analyzed using the rigorous approach of constant comparison.[35] **Open coding** involved line-by-line analysis of each of the transcribed documents, conceptually coding phrases, sentences and paragraphs. These concepts were then grouped into categories that continued to change throughout the process of analysis as data were incorporated with a "best fit" approach. I re-coded the data several times on the basis of emerging categories. During **axial coding**, categories were organized into differentiated relationships within a conceptual paradigm. A core category, responsible for most of the observed change, was identified and further developed during **selective coding**. The other categories were then rearranged in relation to it.

Ideally, I would have returned to the field throughout axial and selective coding to collect data specifically to address gaps in the categories, a process known as theoretical sampling. Saturation is considered the end point of data collection, when no substantially new data is discovered.[35] However, this process of theoretical sampling to saturation was not possible due to time constraints of the placements. I returned instead to the original transcripts to find data that would fill in the categories. The categories did not reach a

point of saturation with this process. As a result, the proposed models are presented as evolving working models.

Verification

The following standards are proposed for evaluating a qualitative research process.[38] **Triangulation** was achieved through combining three different methods of data collection: focus groups, non-participant observation and interviews. **Prolonged presence** of ten weeks in the field allowed for identification of issues in the clinical setting, if not complete understanding. During the process of axial coding, two of my advisors critiqued the ongoing analysis in a process of **peer examination**. **Member-checking** was formally conducted during the second phase of data collection through midterm and final interviews. Following data analysis, a group of students and a group of therapists were specifically convened for member-checking of the proposed model. An informal meeting with a participating therapist from the second phase and feedback elicited from colleagues also contributed to this process.

The findings from this research process provided insight into different patterns of learning relationships developed over the course of the clinical placement. The following description and model can be used to guide reflection, dialogue and ongoing learning in this area. All the descriptive and analytic statements and illustrative quotes are derived from the data.

Results: Building Colleagues by Building Confidence

Clinical education has the potential to build colleagues by building confidence (Figure 3-1). The **attitudes** of the student and the therapist, particularly their initial confidence and expectations, contribute to the development of the learning relationship. Conditions that affect the attitudes of the student and therapist include personal factors, personal and professional experiences, the placement site and the input of the professional educational program. These conditions are discussed in an unpublished work[39] and will not be further elaborated in this article. The nature and dynamic balance of the therapist's presence during treatment (**being there**) and the dialogue between student and therapist (**sitting down**) are important elements of the relationship, and lead to the **roles** that are developed by student and therapist. In the context of the learning relationship, students' **confidence** as learners is built up or broken down.

The concepts of 'confidence' and of being a 'colleague' are central to the following discussion, and will be defined in the context of this research. Confidence is a balanced and realistic recognition of one's strengths and weaknesses. A confident individual is not threatened by gaps in knowledge or understanding, but is motivated to identify and address these through collaborative learning. A confident student "wants to know everything, he knows he doesn't know everything, he wants to learn and he wants to try and that's confidence." (Therapist). Confidence, therefore, is based on a process of learning rather than on a state of knowing.

A colleague is a professional with whom it is desirable to work. Such an individual demonstrates clinical competence, motivation and skills to engage in lifelong learning, and a collaborative and open approach to learning and working. "...just try and remember we're building colleagues here, they're not going to be students forever, they're going to be your colleague...so you're trying to make sure that they are knowledgeable...that's core, obviously, but that they also trust it...They back it up with knowledge, they back it up with actions, and they back it up with, you know, the fact that they can be trusted." (Therapist).

Not all learning relationships build confidence. Four distinct forms of learning relationship were evident in the data (Figure 3-2). The majority of the data reflected a positive relationship of **building confidence**. The roles developed throughout the placement are dynamic, contributing to students' development as colleagues through building their confidence as learners. However, consistent references were made to three negative forms of relationship which, although rare, are memorable and formative. These negative relationships were not observed but were discussed by participants in both phases of data collection. The static roles assumed in these relationships do not actively contribute to building confidence, and may in fact break down the confidence that would contribute to the building of colleagues. Two of these negative relationships characterized therapists, and one characterized students. Through relationships of **hovering** and **abandoning**, the roles resulting from therapists' attitudes and strategies may contribute to breaking down confidence. Experiences of hovering and abandoning were vividly remembered by both students and experienced therapists. Through a relationship of **pretending** confidence, roles resulting from students' attitudes and

strategies may prevent development of appropriate confidence. Pretending was referred to by therapists as 'arrogance' and by students as 'pretending' to be confident when they were feeling uncertain. Each of these negative forms of relationship has potential to become dynamic and so to contribute to building confidence if participants identify and adjust their attitudes and strategies.

Each of the learning relationships will be described below, with the primary focus on relationships of building confidence. In the following description, all pronouns are changed so references to students are masculine and references to therapists are feminine. This is intended to increase clarity and readability and to protect the anonymity of the participants.

Building Confidence

Attitude

The attitude of each is critical to the development of the learning relationship. The therapist welcomes the student. She is not threatened by his presence so is able to affirm the strengths he brings to the placement. The student recognizes and acknowledges both strengths and weaknesses. He is willing to risk making mistakes in order to learn. Both are motivated to engage in mutual learning. "I think that right off the bat …we were both there, going to learn from each other, and respect that we knew different things and could support each other..."(Therapist).

The therapist and student have realistic expectations of the placement. The student's level in the program, his past experiences, and the complexity of the caseload are considered. Emphasis on the process of learning frees the student to ask questions, take time to access resources and experiment with treatment. "You guys can calm down and learn…you can't know everything right now, I mean we still don't know everything right now." (Therapist). Both are willing to commit the extra time and effort the placement will require. They are also open to having fun together as they feel this is important in their relationships with each other and with clients. "…developing that…sense of humor – if you don't have one going in you've got to have one coming out. You have to." (Therapist).

Being there

Being there is the nature of the therapist's presence during treatment. Initially, she is present during most treatment sessions. She teaches skills and techniques through demonstrating and guiding the student verbally or physically. She ensures safety and may step in and take over if safety is compromised. She provides feedback sensitively in the presence of the client, conscious of not wanting to undermine rapport. Later, the therapist will give critical feedback and question the student. This is a component of sitting down and is done privately.

As the student demonstrates safety and competence with treatment, the therapist begins to step back and allows him to lead the sessions. The student is encouraged to be creative in treatment, provided he has sound rationale and ensures the client's safety. When she is confident the student's self-awareness and competence are adequate for safe treatment, the therapist steps out. "…initially, like the first couple of days, she was (there). And then she would be at the end of the bed, and then she would be at the door of the room, and then she would be gone and doing her own thing." (Student).

Rarely is the therapist completely absent, however. She makes sure the student knows she is available for questions. During treatment she may observe unobtrusively, which allows her to evaluate and provide ongoing feedback. "…that doesn't mean I'm never there – I'm popping in, I'll stroll by, stop and listen in the hallway..." (Therapist). While there is a steady progression towards the student's independence in treatment, there is also the understanding that the therapist will return to assist his learning when there are novel or complex conditions.

Being there is gradually replaced by sitting down.

Sitting down

Sitting down is the time spent by the student and therapist in dialogue. It has a number of important components: orientation, feedback, planning and reflection. Throughout the placement, the therapist is approachable and helps the student feel comfortable. Communication is open and honest. The student is straightforward about his questions and uncertainties, and the therapist openly admits that she too has questions and is engaged in a process of continual learning.

Initial **orientation** is thorough and straightforward. "…right when I first got there…they sat me down and said basically 'What are your goals, what are your objectives, what do you want to accomplish from this placement, what have you seen, what haven't you seen. What do you feel your strengths and your weaknesses are? And what do you want to do together with us…to try and achieve those goals and make yourself more confident and strong in the areas that you feel you're weak.' And then we set out a timeline together."(Student).

As she begins to interact with the student, the therapist is careful to provide a balance of positive and critical **feedback**. She affirms the student's strengths and improvements, identifies weak areas and helps develop strategies to address these. The student sees this feedback as part of learning rather than personal criticism. Formal evaluations contain no secrets or surprises, as they are simply a summary of the feedback consistently given throughout the placement. Feedback also involves discussion about the learning relationship. "(She) has approached me…to say, 'How is my communication? Are you getting enough feedback from me? And how are you feeling about what I'm telling you? Am I giving you enough information?'"(Student).

Depending on the experience of the student and complexity of the clients, the student initiates treatment **planning**. The therapist critically questions the student's rationale and together they consider treatment possibilities and potential outcomes. As the student demonstrates competence and confidence, collaborative treatment planning becomes less involved and discussion about treatment becomes more focused and concise.

Reflection occurs on a number of levels. Self-reflection is an ongoing and realistic self-assessment allowing each to better understand what she brings to the learning relationship. Debriefing is the reflection that occurs as the therapist and student discuss completed treatment sessions. They discuss not only the treatment but also emotional and relational issues. "Tell me what you were picking up, your observations…How did you feel? Were you comfortable?" (Therapist). This discussion often leads to collaborative problem-solving. The student also takes the initiative to reflect on his own, often on the way home or later in the evening.

The therapist attempts to help the student connect formal knowledge from the classroom with his experiences in the real world. "'How did that work in class on my skinny little 110 pound partner who has a normal rotator cuff and now I'm trying to apply it to my 275 pound Ukrainian-speaking lady who keeps her shirt on'…It's one thing that they've learned, …it's the groundwork, but then they apply it from there." (Therapist).

Over the course of the placement, focus begins to shift from techniques and physical skills to more holistic client and professional issues. This dialogue often takes the form of story-telling and philosophizing. "We're looking at the patient as a whole…And I think she asks some really good thought-provoking questions …(because) she wants to get me thinking..." (Student).

Roles

Roles change as the placement progresses. Initially the student is in a place of watching, absorbing and getting the feel of the placement. The therapist may assume the role of teacher at this stage. During treatment sessions and when sitting down, the therapist teaches, tells and questions the student. Her primary focus is to facilitate active learning. "…you're going to hate the word 'why' at the end of five weeks… 'Why' doesn't mean it's wrong. Just explain. I want to make sure you understand it and you're not just regurgitating something." (Therapist).

As the therapist steps back and invites the student to become the leader in planning and treatment, the roles begin to shift. The therapist may become a helper during treatment sessions before completely stepping out. Once sitting down is the primary means of interaction, the student assumes the role of colleague and the therapist becomes a mentor to the student. Interactions are collaborative and mutual. At this point the therapist may take initiative to organize diverse opportunities to broaden the student's exposure and learning. Over the course of the placement, an interdependent relationship is established. "Collaborative work is the goal, not only with supervisor/student, but with all the disciplines, the family, the patient. Because I only know part of what you know, you only know part of what I know." (Therapist).

Confidence

Through this progression of the therapists' presence, their dialogue and the roles that are developed, the student begins to trust himself. "I think I'm much more confident

dealing with patients and more comfortable that what we have learned is applicable to what we're doing…I feel we have more skills than we actually realize." (Student). He realizes that he is able to learn from experience, clients, team members and other resources. The student has felt free to be creative in treatment and has become more confident in his ability to detect errors and learn from them. The student also realizes that he has much to learn; his confidence is realistic. "…I think once I hit clinical practice after I graduate it would be foolish of me to not find someone else to ask a question when I'm unsure about what to do." (Student). The student also has developed confidence in his professional role. "I saw in this placement that what we were doing was helping people and making a difference in peoples' lives…I mean that's why I got into this profession…I can make a difference for people and positively impact them and help them get better." (Student).

Hovering

The therapist expects the student to imitate what she does and absorb what she teaches, molding him according to her own philosophies and approaches. "…by the time I got out I had very little confidence in any of the orthopedic skills that I had learned in school, because every time I did something she said 'Oh, no no no…that's not the right way to do the test, you need to do it this way now.'" (Therapist). The student is not allowed to take initiative or to learn actively because the therapist does not step back during treatment sessions. The therapist may criticize the student in front of the client, possibly breaking down the student's rapport with the client.

Roles change minimally in this relationship. The therapist maintains the role of supervisor, and the student does not become a colleague but rather remains a student. The therapist's frequent stepping in makes the student feel incompetent and his confidence is broken down. "I basically was helped to realize that I didn't know very much."(Student).

Abandoning

In this context the therapist is virtually absent during treatment and sitting down is rare. The student develops skills and attitudes without support or guidance. "If I'm doing something completely stupid I would like to know…(she) wouldn't check in on me, or she would never say anything about what I had done." (Student). The therapist

seems unavailable for discussion and questions. Because feedback is inconsistent and rare, there may be surprises on the evaluation. Evaluations may not be based on consistent observations of the student so may inaccurately reflect his learning and competence.

In this relationship, the therapist assumes the role of employer through providing a place for the student to work. The student assumes a role of worker. He feels he is not learning what he should, because he is "running off [his] feet." (Student). The student's initial confidence affects his response to learning in this placement. If he does not feel that his competence matches the independence that the therapist has given him, his confidence may be broken down. He may feel that he needs more input and help than is provided and is not confident to pursue his own learning. By contrast, if he feels able to access his own knowledge and other resources to develop competence in the area, the student's confidence may be built up.

Pretending

In this context, the student enters the relationship with an appearance of false confidence or arrogance "where they know a little more than I do, they're a little sharper than I am..."(Therapist). This may be genuine arrogance, where the student feels he knows enough or has no interest to learn the area of practice. It also may be a disguise for low confidence, where the student fears poor evaluation if he admits to areas of weakness and gaps in knowledge. Whatever the reason, the student is closed to learning. The therapist senses poor self-awareness and motivation so does not feel that the student is safe to be left alone. As a result, she may step back but does not step out. She may attempt to confront the student with the inappropriateness of his attitude through difficult questions and critical observations. These are intended to reveal gaps in his knowledge and raise safety concerns. Positive feedback is minimized to avoid inflating his arrogance. To be able to identify and confront the students' problems, the therapist must be particularly reflective. The student, however, is "not very good at self-reflection, so they don't take criticism well because they're not looking at themselves and saying '...I don't know how to do that and I have to ask.'" (Therapist).

Although the student initially attempts to assume a role of colleague, the therapist may not allow this if she is confident in her assessment of the situation. "...From the

start you're coming down as big brother on the student. And that's a hard way to start a placement out." (Therapist). If the student responds with increased openness to the learning relationship, he may go on to build more appropriate confidence. However, if he remains closed, the student's attitude of arrogance or false confidence may persist and he may go on to unreflective and unsafe practice. This form of placement is exhausting and frustrating for the therapist.

Discussion

Building confidence

The confidence developed in these relationships is based not only on students' existing knowledge but also on their ability to learn. Attitude is an important factor in the formation of the learning relationship.[15,26,28,34] In positive learning relationships, students and therapists have 'expert' attitudes towards learning.[7,12] As they collaboratively engage in progressive problem solving,[7] they form a relationship of openness and mutual learning.[2] They are motivated learners, actively bringing their formal knowledge into complex problems of practice, thus developing all the forms of professional knowledge.[4] Through stepping back, therapists allow students to actively develop their knowledge through creative experimentation in treatment. They encourage deep learning from this experience through reflection and dialogue[1,29-32] as they sit down with students. A number of studies have previously identified interdependence and collaboration between student and therapist[15,28] and the shift of roles from teacher to mentor[15] as components of positive clinical education experiences. There also has been widespread recognition of the importance of communication, the approachability of the therapist[6,15,25,26,34] and the need to verbalize expectations.[25-28,40]

Hovering, Abandoning and Pretending

Closed attitudes may both contribute to and result from relationships that break down confidence. Defensive and closed attitudes towards the learning relationship[2] contribute to relationships of 'hovering', 'abandoning' and 'pretending'. Because these attitudes limit opportunities for reflection and dialogue, development of the different forms of knowledge also may be limited. If students are not guided to recognize the validity or importance of other forms of knowledge, they may maintain a technical focus. Failure to acknowledge and develop the different forms of knowledge may limit the

motivation and means to engage in lifelong learning. If students do not recognize or are afraid to acknowledge the areas in which they need to learn, they may present with the closed, arrogant attitude identified in 'pretending'. It is important to note that if students appear to be arrogant but in fact have low confidence, the efforts of the therapist to break down their arrogance may in fact further destroy their confidence.

The clinical education literature has previously identified some aspects of these negative learning relationships. 'Hovering' reflects the apprenticeship model of supervision,[25-27,41] characterized by a predominantly technical, teacher-centered focus.[6,40] Students who prefer a passive approach to learning may contribute to a 'hovering' relationship.[28,33,34] 'Abandoning' has been reflected in students' perceptions of therapist being unavailable and providing inadequate feedback.[15,28] The arrogance identified in 'pretending' had been discussed in research focusing on students' problematic behaviors and attitudes.[28,34,40]

The role of confidence

While confidence has been mentioned in passing in the literature, it has not been identified previously as a central factor in the learning relationship. Students have identified clinical instructor behaviors that contributed to and detracted from their self-confidence.[13] Other discussions of confidence have explored students' confidence in the process of self-directed learning,[27] the impact of negative clinical education experiences in breaking down confidence,[15] and clinical educators' confidence in their methods of supervision.[25] However, until this research the development of appropriate confidence in clinical education has not been an area of focus.

The attitudes and confidence developed through clinical education experiences may impact the relationships later developed with clients and team members. If students develop an self-awareness and a recognition of the complexity of the clinical environment, confidence in their ability to learn and the motivation and tools to engage in lifelong learning, they may be more likely to create collaborative relationships with clients and team members in professional practice. This collaborative learning could contribute to increasing clinical competence. If they do not develop these attitudes or acquire these skills, they may fail to later develop effective professional relationships. Possibilities for lifelong learning and professional development may thus be limited.

Thus, while confidence is but one of many possible characteristics of a desirable colleague, it may play a particularly important role in the expression and development of many of these characteristics. Self-awareness, effective communication, collaboration with team members and clients, life-long learning and increasing clinical competence resulting from a process of learning all may be affected by therapists' confidence as learners. Confidence, therefore, may have a central place in professional development beyond the clinical education context.

If confidence plays such an important role, its development should be intentionally facilitated in clinical education. Various approaches to building confidence could be explored. Alternative models such as collaborative placements may assist with building confidence, as these involve peer learning and may allow more time for sitting down and reflective dialogue.[20,42] Models of clinical education that emphasize dynamic development of roles through the placement may be used to structure clinical education experiences. A coaching model[43] has been proposed, in which the therapist seeks to nurture the student's active learning and professional growth through an intentional shift of roles. An educator-manager/self-directed learner model[44] also has been developed. The student's learner task maturity is identified and roles are developed to match and enhance the student's skills and confidence as a self-directed learner. Creative approaches to maximize the time available for the reflection and dialogue of 'sitting down' could be explored. Interactive journaling[45] is one such possibility. Collaboration among the professional associations and academic and clinical communities to establish goals and expectations for clinical education processes and outcomes is also important.[46] This would allow students and clinical educators to set appropriate learning goals based on shared expectations. Ongoing formative and summative evaluation could then reflect these goals and expectations.

Limitations of the research

The research process incorporated a small number of participants from a limited range of clinical settings and models of clinical education. Participants may have had a unique perspective on learning by having been affiliated with one educational program. The participants also may have represented a unique subset of clinical educators and students, because they were included through a convenience sample rather than a

theoretical sample. The national and provincial health care system that provided the context for this study may have differed from other systems in important respects.

The primary investigator was responsible for all the data collection. While this provided consistency throughout the data collection process, it also may have contributed to systematic bias throughout the data collection and analysis. A collaborative approach involving several researchers for data collection might have produced more saturation and comprehensiveness in the model. Despite ongoing dialogue with colleagues and academic advisors, the perspectives of the primary investigator may have significantly influenced the data collection and analysis.

We are not claiming universal applicability of the model. It is based on a local and limited research process and, therefore, may have limited applicability in other contexts. Readers will need to assess the fit of the model with their own context. The model may be used to stimulate reflection and dialogue among academics, clinical educators and students that could facilitate improvement of the clinical education process.

Future research

To further develop this model and increase its comprehensiveness and applicability, qualitative and quantitative research in diverse practice settings, educational and health care systems, and models of clinical education would be required. The effects of confidence on new graduates' practice and their approach to lifelong learning should be explored. This could be done as prospective research, following students forward from clinical education to practice, and as retrospective research, reflecting with therapists on the place of clinical education experiences in their professional development. Research on the learning outcomes of different clinical education models is also indicated. Clients could provide important perspectives on the effects of different learning relationships in the clinical context. Clients' perceptions of their relationships with therapists and students would allow exploration of parallels in power sharing, collaboration, and interdependence in the learning and therapeutic relationships. Exploration of the effects of gender in the learning relationship also may be important, as gender has been identified as an issue in this research and in the literature[34] but has not been explored.

Summary

The development of attitudes and skills for lifelong learning may be enhanced or limited in the context of clinical education. The learning relationships developed in this context may contribute to building up or breaking down students' confidence in their ability to learn and in their professional role. Through developing relationships of collaborative learning with students and intentionally revealing and affirming their unique contributions to the placement and the profession,[47] clinical educators may contribute to building confidence, building colleagues, and ultimately building the profession. It is important for the profession as a whole and for each individual involved in clinical education to better understand the goals, expectations, processes and outcomes of the learning relationship in physical therapy clinical education.[46] In this way, we will learn from our experiences and from each other to continually improve this pivotal aspect of our professional education.

Tables 3-1 through 3-4
Profiles of participants

Table 3-1

Profile of clinical educators from focus groups (3 groups, total n=13)

Years of Clinical Experience		Current area of practice		Number of students		Other models		Preparation	Age		Gender
1-5	3	PP	1	0	4	Collaborative	1	6 had	25-35	5	Female: 10
6-10	0	Acute	2	1-5	1	Shared	2	attended	36-45	4	Male: 3
11-15	1	Rehabilitation	3	6-10	0			workshops	>45	4	
16-20	3	LTC	1	11-15	1			offered by	range	27-50	
21-25	3	Mixed	4	16-20	3			the			
26-30	3	Home Care	2	21-25	1			affiliated			
range	1-28			>25	3			university			
				range	0->100						

(PP=private practice, LTC=long term care)

Table 3-2

Profile of students from focus groups (2 groups, total n=8)

Prior education		Year in program	Age		Gender
Undergraduate degree/diploma	5	All in final year	20-25	3	Female: 3
Graduate degree	1		26-30	4	Male: 5
High School	2		31-35	1	
			range	22-31	

Table 3-3

Profile of therapists from observation (n=2)

Years of clinical experience	Current area of practice	Number of prior students	Other models	Preparation	Age	Gender
21-25	Acute	16-20	Shared	Personal, university workshops	36-45	Female
1-5	Rehabilitation	0	N/A	Personal	25-35	Female

Table 3-4

Profile of students from observation (n=2)

Prior education	Year in program	Age	Gender
Undergraduate degree	3	26-30	Male
Diploma	2	26-30	Female

Figure 3-1
Building Colleagues

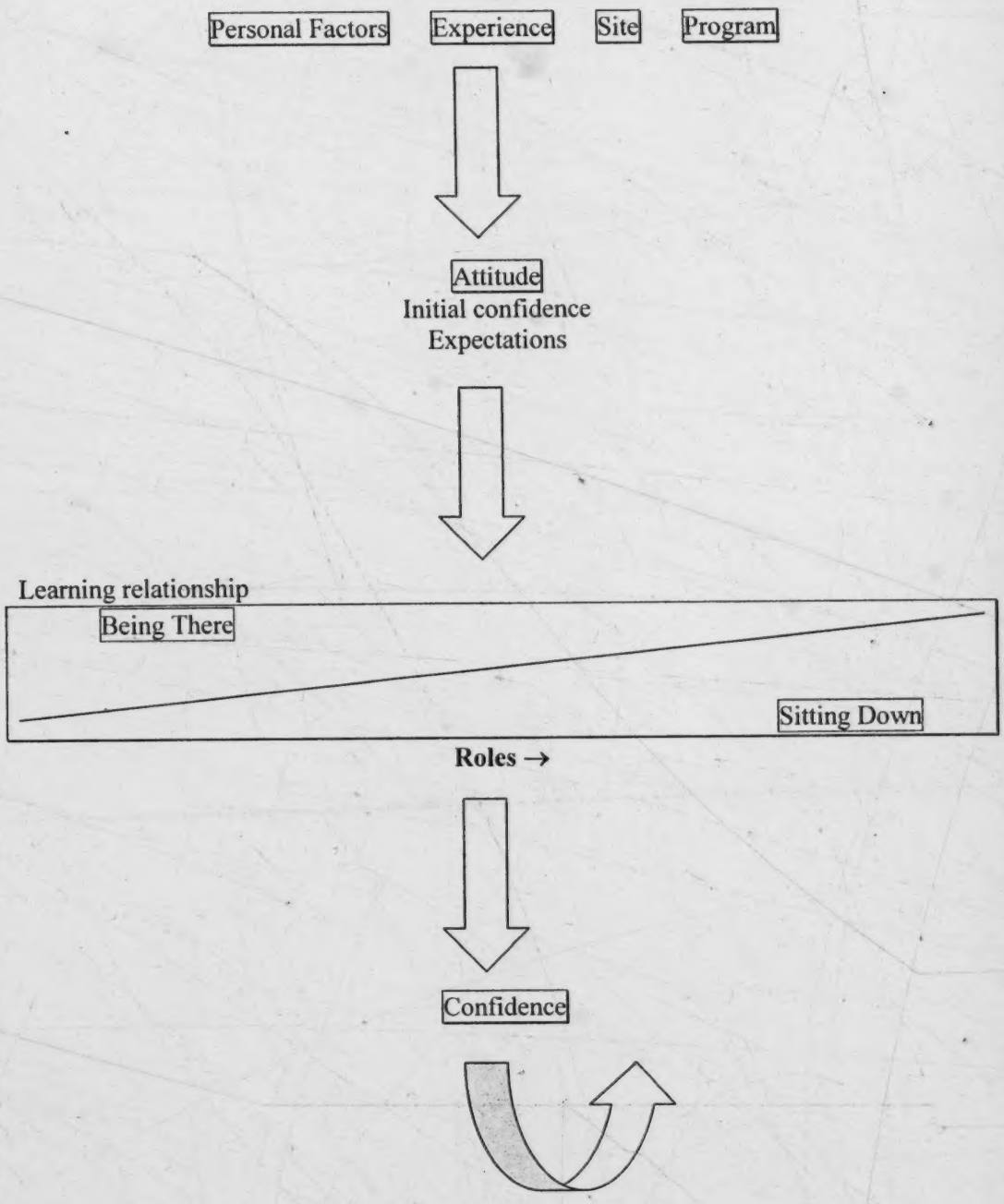
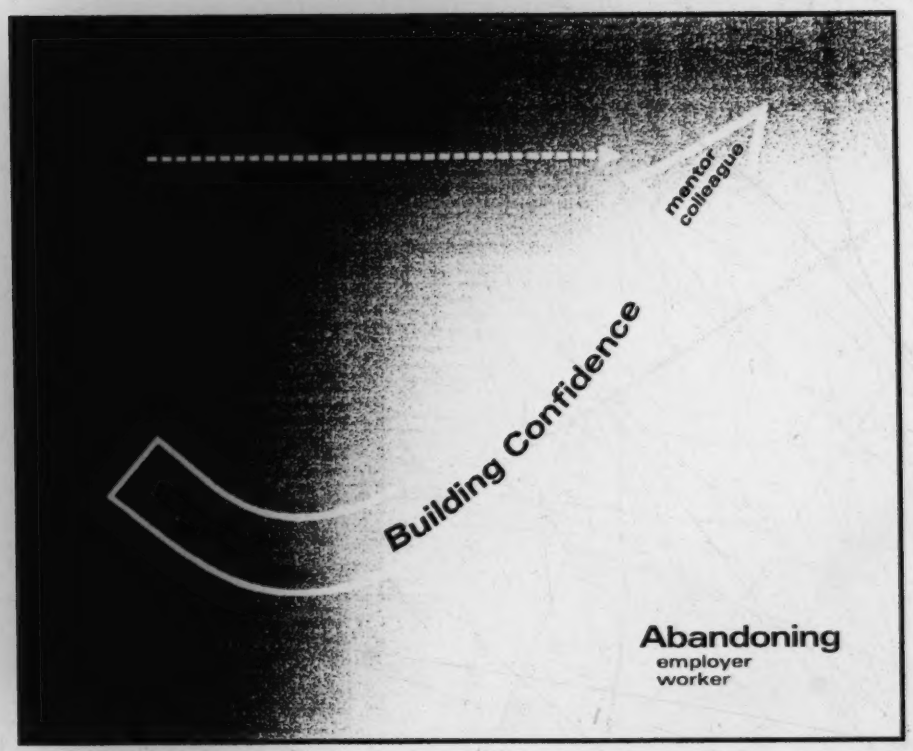


Figure 3-2 Forms of Learning Relationship



Four distinct forms of learning relationship: **roles** of therapist (purple, top) and student (red, bottom); color intensities represent interaction of **being there** (blue, decreasing intensity left to right) and **sitting down** (green, decreasing intensity top to bottom). Within a relationship of **building confidence**, there may be a transitional **role** with the therapist as helper and the student as leader (not indicated in figure).

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CHAPTER 4
LEARNING WITH GROUNDED THEORY: A STUDENT'S EXPERIENCE OF GROUNDED THEORY IN THE REAL WORLD

Introduction

New learning often requires translation from the abstractions of theory to the complexities of practice.[1] This learning can be enhanced by critical reflection and dialogue.[2-6] The intent of this article is to reflect on the first author's experience of beginning to learn grounded theory in the context of a thesis-based Master's program. A chronological approach will be used to guide the reflection. The research project and findings will not be the focus of the article, but will be used to illustrate the discussion. Issues faced in practice will be compared and contrasted with the ideals of grounded theory. Through the dialogue of professional publication, new grounded theory researchers may be able to better anticipate some of the complexities of conducting grounded theory research and to enhance their own reflection through comparison of this experience with their own. Experienced grounded theory researchers may gain a better understanding of some of the issues faced by the novice researchers whom they mentor.

Getting established

I chose to study the clinical education process in physical therapy, having developed interest in the area through clinical education experiences as a physical therapy student and as a practicing clinician. As I began graduate level coursework to support this, I first grappled with the nature of reality and of knowledge. My undergraduate professional education had been primarily situated in the positivist paradigm, in which reality is viewed as objective, to be discovered and controlled through knowledge.[7] Now, however, I was confronted with the postmodern paradigm, in which reality is viewed as subjective, to be provisionally understood through locally constructed knowledge.[7] I gradually came to see knowledge as a dynamic social construct, a view consistent with much of the adult learning and clinical education literature. This new perspective of knowledge later guided my decision to use qualitative research methodology.

As a new graduate student and researcher my confidence was initially low, as I tended to focus on how little I knew rather than on the process of learning. I had many

more questions than answers but was hesitant to request help or direction from my advisors, thinking I ought to learn independently. As a result, I did not benefit from the sort of collaboration that would have been possible had I asked for it. I might have been able to establish more initial confidence as a learner through open dialogue with my advisors and acknowledgement of my lack of confidence. Verbalization of our expectations for the learning process and outcomes would have provided a valuable framework for discussion.

Designing the research

Accessing the literature

A thorough exploration of the clinical education literature in physical therapy and other health professions gave me a sense of current issues and research in clinical education. From the disciplines of adult education and sociology I also was exposed to perspectives regarding reality, knowledge and learning. The literature sensitized me to both strengths and gaps in the research and helped establish the initial direction for my own work. It later increased my sensitivity during data collection and analysis,[8] and ultimately proved to be pivotal in the development of my understanding of learning within clinical education. Early exposure to the literature may cause researchers to impose preconceived concepts on the research, leading to a deductive rather than an inductive approach to research.[9] To minimize this tendency, ongoing reflection and peer review were necessary.

Choosing the Method

Having discovered some of the gaps in what was known in clinical education, we determined that a better understanding of learning relationships established within physical therapy clinical education would provide an important contribution to the current body of literature. Qualitative methodology was chosen for its socially oriented, exploratory approach to studying this area in which little is known. In choosing from among the qualitative traditions, grounded theory seemed the most appropriate methodology for a number of reasons. Procedurally, its relatively structured approach was closest in philosophy to the quantitative tradition with which I was familiar.[7,10,11] The process of grounded theory moves the researcher from description and interpretation to the development of a conceptual theory that fits the data from which it is derived, is

relevant and works to explain behavior.[8,9,12] Such a theory could make an important contribution to the understanding and ongoing development of clinical education. Finally, grounded theory is especially appropriate for the study of social processes[10,11] such as the relationships developed within clinical education.

My primary sources for learning the grounded theory process were several grounded theory overviews[10,11] and a procedural text[8] written for new grounded theory researchers. The foundational works of grounded theory[9,12] were accessed only after completion of the research. In retrospect I realize that, had I read them earlier, these latter works would have helped me considerably. While it had seemed more efficient to limit my reading to the practice-oriented accounts of grounded theory, the original writing contains important philosophical grounding that would have helped to guide and streamline the learning process. The overview literature put me in the position of relying on descriptions of procedure without clearly understanding their purposes. Conversely, some practical experience may have been necessary to adequately understand and utilize the theoretical literature. The guidance of mentors and advisors seems particularly important in directing the efforts of beginners as they seek an appropriate balance between learning from the theoretical literature and from their experience in the field.

Writing the proposal

Research questions were structured to guide development of a theory of the learning relationship within physical therapy clinical education: 1) How do clinical educators and students perceive the learning relationships that are developed between them in the physical therapy clinical education setting? 2) What characterizes these relationships in practice? The research design used two phases to address the different questions. The first phase consisted of focus groups in which the perceptions of the participants would be explored. The second phase consisted of observation and individual interviews with therapists and students during consecutive five-week placement periods to explore their learning relationships. Upon completion of the analysis the model developed from this process would be situated with the clinical education and adult learning literature.

At this stage I could not clearly visualize how the research would progress, but the grounded theory literature provided enough guidance to establish the initial direction.

As I began to write the proposal, I experienced the tension of using a qualitative approach in a graduate program with a primarily quantitative focus. I sought to strike a balance between the requirements of the program and my understanding of the qualitative research process. The overall framework for the research process and the interview questions for the first phase were developed from concepts and issues identified in the literature. The second phase would be more 'emergent'. An observational guide was derived from the literature, but was kept broad enough to allow for emergence of novel concepts and insights during observation. I also developed sample questions for the interviews, with the understanding that actual questions would be derived from observations and that I would submit these questions for ethical approval prior to each of the interviews.

Ethical considerations

Several ethical questions arose at the proposal stage. First was the inability to ensure anonymity and confidentiality in the context of the focus groups. Participants were asked to respect the anonymity and confidentiality of the other group members but were made aware that this could not be guaranteed. Second was the issue of recruiting therapist/student pairs for observation while avoiding the effects of power and coersion to which the students were most vulnerable. We decided to first recruit the therapists and then individually contact their prospective students. Since the students might feel pressured to participate if they knew their supervising therapist was interested in the study, we did not tell them of the therapists' expressed interest. This process was ethically sound but pragmatically difficult, insofar as it extended the time required for recruitment. Finally, to prepare for the remote possibility of observing unethical professional behavior during data collection, I familiarized myself with the pertinent regulatory guidelines for ethical practice. I realize in retrospect that I should have indicated in the consent form my obligation to report unethical practice. Fortunately, no unethical behavior was witnessed.

Conducting the research

Sampling

I soon discovered a tension between the ideals of sampling and the realities of recruitment. Open sampling is used initially to access the greatest possible diversity of

participants within the phenomenon being studied. As data collection and analysis progress, sampling becomes more specific as the researcher seeks addresses gaps in the emerging theory. Sampling is finished when no significant new data emerges during data collection, a point known as theoretical saturation.[12] This process of theoretical sampling is a foundational component of grounded theory.[8,9,12] On the basis of this framework, I planned to recruit a wide range and large number of participants for theoretical sampling. Diversity of characteristics would include years of experience, clinical and geographic setting and gender. I would continue with observation until the categories became saturated during the second phase of data collection and analysis. The remaining therapists and students would be included in the stage of member checking. However, this plan for theoretical sampling turned out to be a naïve one.

I had not anticipated the difficulty I encountered in recruiting participants. Despite sending repeated recruitment letters to three classes of physical therapy students and all the placement sites in the area, I received little response. Rather than using the proposed framework for theoretical sampling, I accepted all offers of participation to maximize the number of participants. Thus, rather than a theoretical sample I obtained a convenience sample in which inclusion of participants was not controlled.

Recruitment for theoretical sampling seems something of an enigma. I questioned the appropriateness of the impersonal and academic recruitment letters required for ethics approval. It seemed that a personal recruitment process would be more appropriate for a qualitative research process that is intensive, interpersonal and might be perceived as threatening. Had I been able to interact with clinicians and students in the recruitment process and allay their fears, a greater number and wider range of individuals might have been willing to participate. However, because personal contact could also create coersion, this approach was not used. As it was, those individuals who were sufficiently motivated to participate despite the possible discomfort of the research process may represent a narrow and unique subset in the larger population of students and therapists. I question whether it would have been feasible to recruit a full range of participants for observation. During the focus groups I heard of experiences with arrogant students and vindictive therapists. Would these people have been willing to participate? Likely not. Vicarious accounts would need to suffice.

Collecting the data

The focus groups proved an excellent context to establish confidence as a qualitative researcher. The semi-structured interviews provided a comfortable framework within which to learn skills of facilitation and data collection. Through the interviews, rich data were collected as participants described a wide range of clinical education experiences. Focus group participants entered enthusiastically into the process of story-telling and interacted freely and openly. There was a sense of fun and camaraderie that may have been enhanced by keeping the students and therapists in separate groups.

The second phase of observation and interviews was less structured and thus more challenging. I needed to continually choose how to be present and what to look for. My intent was to be as inconspicuous as possible. However, I knew my presence would have some effect, likely causing the participants some discomfort. To minimize this, I interacted with the participants as a colleague, stressing my common background as a physical therapist, clinical educator and student, and de-emphasizing my position as a researcher. During treatment sessions and dialogue I tried to become inconspicuous, but sometimes found it difficult to remain quiet and stand back. A memo written early in a placement period describes my struggle: "I find myself wanting to ask a lot of questions about what [the therapist] is planning with the student, …about her treatment, rationale, progression. I keep thinking of suggestions for her treatment as well! THIS IS NOT MY PLACE – I need to stand back and WATCH!!" During times of uncomfortable silence between students and therapists, I consciously suppressed my natural tendency to jump in and help the participants feel more comfortable with each other.

My roles sometimes became blurred in my desire to 'give back' to the participants. Several times I stepped out of my role as non-participant observer to offer resources from my own experience as a physical therapist. For example, I observed a treatment session in which the physical therapist, the student and an occupational therapist were co-treating. From my clinical experience, I felt that a particular technique would make their treatment more effective. I had, by this time, established rapport with the student and therapist and felt they would welcome rather than be threatened by my input. I quietly made the suggestion to the occupational therapist who then followed it up. The team was enthusiastic about the effect of the technique and later expressed

appreciation for the input. This sort of intervention could be considered part of relationality,[13] in which the researcher seeks to establish a relationship of mutual giving and trust. However, to remain consistent with the purposes of grounded theory and minimize my impact in the field, I should have waited until data collection was complete before becoming involved in this way. Despite the possible benefits of such involvement, it removed me from my established role and may have added complexity to our relationship or somehow changed the nature of the learning relationship. These illustrations highlight my struggle with being present as researcher. My desire was to be a supportive and relational presence, while my role was to be an observing and questioning presence. In retrospect, I realize that a more interactive role in the research may be better suited to my natural abilities and personality.

In deciding what to look for, I initially used themes derived from the literature and focus groups to guide my observation. As data collection continued, my focus shifted to pursuing questions that arose during data collection. I learned to continuously question what I was seeing. For example, when the student reached an independent stage and treated without supervision, I wondered, "If there were gaps [in knowledge] and problems [with treatment] at this point, how would [the therapist] know? Does [she] have a philosophy of being present at all in this…stage of the placement?" If these questions remained unanswered during observation, I asked them during the interviews. Interviews and informal questions in this phase were helpful for accessing participants' reflections and for pursuing my own unanswered questions.

Field notes written during observation consisted of quotes, descriptions, analytical observations, and questions to sensitize me for further observation or to ask later in interviews. Reflections were written immediately after each data collection session. The notes and reflections were then transcribed and clarified. This extensive, iterative process helped me make sense of what I was seeing, identify where else I needed to look, follow trains of thought, assess the research process, and recognize biases. Only in retrospect did I realize the importance of these theoretical memos and reflections. Had I been convinced of their importance initially, I would have been more consistent and thorough in writing them, more careful in organizing them and more consistent in reviewing them.

Reflecting

Because qualitative research is interpersonal and subjective, qualitative researchers need to intentionally reflect on the effect of their presence on the research environment and process.[13] Prior to beginning data collection, I wrote a comprehensive personal reflection[14] exploring my frame of reference, theoretical and methodological orientation and past experience as an undergraduate student, physical therapist, clinical educator and graduate student. Through this valuable exercise I identified concepts from the adult learning and clinical education literature that were particularly important to me because of my experiences and values, recognizing that I would be uniquely sensitized to these throughout the research process. In seeking to understand the 'self' I brought to the process, I tried to decrease my unique effect on the data collection and analysis processes. While this minimizing of self is not emphasized in all forms of qualitative research, it is consistent with the premises of grounded theory.[7]

Reflection continued throughout data collection and analysis, recorded in the form of memos. Ongoing reflection during data collection increased awareness of my effect on the field and the research process. "I'll have to be very careful to stay back and quiet. [The student] is very quiet and I could easily overshadow her and let my personality affect their relationship or change the nature of their interactions." Despite attempts to minimize the effect of my presence, I needed to identify the ways in which my presence affected the outcomes of the research. Early in one placement period, the therapist I was observing seemed uncomfortable as the student and I followed her to the nursing station. "She is definitely being watched, and that is uncomfortable. She also said she's very busy right now – our presence may just feel like a bit much." Finally, I reflected on the effectiveness of data collection so I could improve the process. "I felt much more comfortable with the interviews this time – probing, listening, asking myself questions and then asking [the participants] some of these if it seemed appropriate. I think I was more active in the process than with the previous interviews."

Analyzing the data

A key characteristic of grounded theory analysis is constant comparison.[12] This process involves systematic comparison and questioning[8] as the data are rigorously coded, categorized and developed into a conceptual theory. Glaser and Strauss described four broad processes involved in analysis: 1) comparing incidents applicable to each

category, 2) integrating categories and their properties, 3) delimiting the theory, and 4) writing the theory.[12, p.105] Strauss and Corbin[8] later added considerable detail to the description, identifying phases of data analysis that move from open coding through axial and selective coding.

The following is a description of the different phases of analysis[8] and of my experience during these phases. Throughout this complex learning process, the balance of flexibility and accountability provided by my advisors proved to be invaluable. The first phase of analysis, open coding, involves line-by-line conceptualization and categorization of the data. The process of hand coding produced an overwhelming number of codes to be categorized, resulting in a long delay as I mustered the courage to continue analysis. At this stage my advisors respected the process of self-directed learning, giving me considerable space yet responding to my requests for support and guidance. During this time I needed deadlines and timelines to keep me moving forward in analysis.

Axial coding involves reworking and condensing the categories and arranging them in a conceptual paradigm of interrelationships. I recoded and re-categorized the data a number of times to develop a paradigm that fit the data. There was a sense of increasing clarity as I moved back and forth between the data, concepts and categories and as I established relationships within and between categories and checked these for fit with the data. This movement between inductive and deductive investigation drove the conceptual development of the model. My advisors' critical questioning was particularly important during this phase. They helped to identify leaps of logic and assumptions that were not grounded in the data. For example, I tended to extrapolate from the data, including in my model likely outcomes of the different learning relationships. When I returned to the data to find support for these hypotheses, I often found inadequate evidence to include them in the model.

Selective coding involves choosing a core category that explains most of the observed change or process. All other categories are then conceptually related to this core category. During the stages of open and axial coding, I wrote theoretical memos to record analytical insights and questions. Through this ongoing process, I came to the "aha"[15] of identifying 'confidence' as the core category. I had not been sensitized by the

literature to the importance of this concept, yet it fit and worked as I tested this hypothesis against the data and my own experience. A further process at this stage was defining the 'story' through writing a narrative account of the paradigm I had developed. I attempted many versions of the story, rearranging relationships and developing analogies to address the model more conceptually. The process, while time-consuming and labor-intensive, contributed significantly to further refinement and clarity of the model.

Member checking was conducted to assess the plausibility[8] of the model. It was first done informally with friends and colleagues. Sessions were then conducted formally with a group of final year physical therapy students and a group of physical and occupational therapists. With each group, I described the model and then asked for feedback regarding fit with their experiences. Participants' responses were animated and enthusiastic. They responded with stories of their experiences, using terminology from the model. It was at this stage that I recognized the value of providing a language and conceptual model for discussion and reflection on experiences.

The considerable time required for analysis and the timing of data collection are realities that require consideration.[9,12] During data collection in the second phase, the five-week placement periods allowed little time to transcribe, code, categorize and develop properties and dimensions. Many gaps became evident months later as data analysis proceeded. Ideally I would have sought answers in the field, but since the data collection period was finished answers had to be sought from the original data. With these limitations, I was unable to saturate the categories. Possible alternatives to extend data collection could have included identifying key informants for in-depth interviewing once the observation phase was completed, forming further focus groups to explore gaps in the categories, and scheduling data collection periods with more time between them for analysis. Pragmatically, I must now simply acknowledge limitations of the model resulting from limitations of recruitment, time and data collected.

The intensive processes of data collection and analysis required enormous time and energy. I was fortunate to be able to take several extended breaks from data analysis and found that I returned from these with fresh perspectives and renewed energy. Such "incubation" periods are recommended in the literature,[9,15] as they allow time and space

for reflection and the development of conceptual clarity. Such flexibility may not always be practical within the constraints of time and finances faced by graduate students. However, in the interests of maximizing both the novice researchers' learning and the outcomes of the research, creative approaches to achieve such flexibility are worth considering.

Returning to the literature

It was informative to return to the grounded theory literature following completion of data collection and analysis. Much of the theory that had seemed vague and mysterious lost its abstractness as I identified it with my experience. Initially I needed the theory to guide my practice; practice, in turn, gave meaning and depth to the theory. This was particularly true of the processes of coding, categorizing and writing theoretical memos. Whereas I initially had little sense of how I would conduct these procedures, they now seemed intuitive and obvious. As I reread the definitions and descriptions and recognized the processes in my research, there was a sense of both relief and accomplishment in realizing that I had incorporated many of them quite naturally. Descriptions of procedure and terminology provide new researchers with a conceptual language to guide their reflection and learning and fortunately they are not as mysterious in practice as they might seem in theory.

Returning to the clinical education and adult learning literature also proved to be interesting and enlightening. Concepts in the literature gained depth and complexity of meaning that they lacked when disconnected from practice. In a sort of reverse sensitivity, I became sensitized to the clinical education literature through my research. Themes and issues identified in the research across diverse clinical education contexts overlapped with many of the concepts incorporated into the model. This allowed me to situate the model within the body of literature. I also began to notice references to confidence that had initially eluded me. However, most of these references were brief, superficial and fleeting. There was a notable absence of focus on the concept of confidence in the clinical education literature. This gap confirmed the unique contribution of the model that had been developed.

Writing

It is recommended that grounded theorists publish a monograph to disseminate their theories.[16] I chose to write an article rather than a monograph in part because of limitations of resources and time. I also felt that clinicians would be more likely to read an article than a book in the limited time available for such activities. Because adequate description of context, method, findings and analysis[8,13,16] is necessary for readers to engage with and judge the research,[17] considerable reworking was necessary to achieve such comprehensiveness with clarity and brevity. This proved to be a valuable process of interpretation,[15,16,18] requiring that I keep the story grounded in the data while refining and reforming it during writing.

Evaluating the research

Procedural validation is one of several accepted means of assessing qualitative research.[8,13] Commonly accepted standards include: 1) prolonged time in the field, 2) triangulation of methods, sources of data collection and of data collectors, 3) peer review, 4) negative case analysis, 5) clarifying researcher bias, 6) member checks, 7) thick rich description and 8) external audits.[11] Use of theoretical sampling is a further standard specific to grounded theory research.[12] Prolonged time in the field was attempted through consistent presence at observation sites during the second phase of data collection. However, two placements of five weeks duration were not adequate for collecting the range and depth of data required for saturation. Another rationale for prolonged time in the field is to permit a better understanding of the complexities of the field.[11] Personal experience as a student, physical therapist and clinical educator may have decreased the time required for me to develop this deep understanding. Triangulation of methods involved the use of diverse focus groups, observation and interviews. Only one individual collected the data, however. While this simplified establishment of rapport with participants and ensured consistency, it also limited the data collection process to one perspective. Peer review took the form of regular meetings with my advisors during axial and selective coding. Member checks near the end of the analysis confirmed and helped to further refine the model. Through an intentional reflective process and dialogue with my advisors, researcher bias was identified throughout the research process. Theoretical sampling and negative case analysis were not achieved because of

difficulties with recruitment and limited time for data collection. An external audit was not conducted.

I often questioned my adequacy as 'data collection instrument'. Despite preparatory and ongoing reading, several qualitative research courses and conferences, practical experience and dialogue and collaboration with my advisors, I remained a novice. However, through reflection and the support and guidance of my advisors, many of the missed opportunities, mistakes and oversights contributed to deep learning from this experience. I have come to accept my role as a learner as well as my role as a researcher.

Summary

Two themes have recurred throughout this reflective process: challenges with time and the establishment of expectations. Issues of time that arose throughout the research process include adequate time and appropriate timing for accessing the literature, the considerable time required for recruitment of participants, allowing enough time for collecting and analyzing the data, and taking extra time for reflecting and learning. Advisors and students need to find a balance between the structure and constraints of a graduate program and the flexibility required for the qualitative research process and for effective learning. This is a challenge requiring ongoing open communication and considerable creativity. In this process, advisors and students may benefit from identifying their expectations for the process and outcomes not only of the research but also of the student's learning.

The process of learning grounded theory is a complex, rich and rewarding one. I hope that, by recognizing and articulating some of the complexities and issues that arose during my first experience with grounded theory, I have enabled other novice researchers to better anticipate and negotiate the process and have alerted experienced researchers to some of the issues their less experienced colleagues may encounter along the way to becoming qualitative researchers.

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CHAPTER 5
CONCLUSION

Summary of the results

The model of "building colleagues" that was developed from this research provides important insight into current practices in physical therapy clinical education. The identification of confidence as the core of the model is particularly significant in that it provides a novel and practical lens through which to view the learning relationship. The model presents other factors that shape the learning relationship and relates them conceptually to provide a broad overview of the process. The framework of positive and negative relationships presents a conceptual picture of possible learning relationships, a common terminology for dialogue, and a tool for reflection and discussion. Thus, while the model is based on a limited sample and requires further development, it contributes to a better understanding of clinical education practices.

This model, when situated in the clinical education and adult learning literature, echoes many of the themes previously raised through clinical education research. However, no previous research has produced a conceptual model interrelating these themes. Furthermore, research has not previously identified learning confidence as a central factor in the clinical education learning relationship. The model thus occupies an important place within the clinical education research.

A grounded theory approach proved to be effective for exploring learning relationships in clinical education. The relative structure of this qualitative research process provided clear direction for this novice researcher. The process of learning the approach was challenging nonetheless. Throughout data collection and analysis, the researcher observed and experienced complex learning processes: physical therapy students' learning in the clinical context and her own learning as a graduate student and novice researcher. Insights about knowledge, learning, and learning relationships became important not only in light of the physical therapy students' learning but in light of the researcher's own learning. Through the process of learning grounded theory in the context of supportive relationships with her advisors, the researcher experienced firsthand a relationship of building confidence.

Implications for practice

The literature already contains many models of clinical education. However, these are ideal models, derived from theory rather than from observational research. The model of "building colleagues" presents a conceptual picture of clinical education practices rather than clinical education ideals. In comparing the positive relationship of "building confidence" with the models, a number of them seem particularly promising in their ability to build confidence in learning. These include models that emphasize collaborative relationships, either with multiple students,[1,2] multiple mentors[3] or self-directed learning[4,5] models in which the student and therapist collaborate to direct learning throughout the placement. The diverse and intentional learning relationships developed in these models have potential to build students' confidence as learners. Models that emphasize the changing roles of therapist and student throughout the placement[6] also could effectively build students' ability and confidence in learning.

This model highlights the need to determine and clearly express expectations for processes and outcomes of clinical education. Professional associations, educational programs, clinicians and students all could provide valuable input in establishing clear goals.[7] The judicious choice of sites and clinicians for clinical education may prove to be very important in the development of new professionals.[8] It also may prove to be a contentious issue. However, it seems that contexts that effectively build up confidence should be identified and utilized more effectively. Those that consistently break down confidence also should be identified and either assisted to become more effective in building healthy learning relationships or, if this is not possible, avoided altogether. Limited availability of sites could make the latter option a difficult choice. However, creative approaches to better utilize a smaller number of sites might be worthwhile, if they contribute to more consistently building confident lifelong learners. Evaluation of learning relationships would require feedback from students and therapists as well as assessment of learning processes and outcomes. New tools may need to be developed to effectively and consistently perform such evaluations.

Continued efforts to equip students and clinical educators with the skills and attitudes necessary for relationships that build confidence are indicated. Workshops could be provided for both students and clinical educators.[9] In this context, expectations

could be discussed, attitudes encouraged, and philosophies and creative approaches developed. Clinical educators could be presented with diverse models and tools and helped to implement approaches appropriate to their unique contexts. Professional programs could continue to develop creative ways to communicate with and support clinical educators and sites affiliated with the programs.

Dissemination of the results

A presentation of the results was provided for physical therapists and occupational therapists at the Royal Alexandra Hospital in Edmonton, Alberta in May, 2002. A poster presentation of the research results was presented at the Canadian Physiotherapy Association National Congress in Halifax, Nova Scotia in July, 2002. A copy of the research results will be sent to each of the facilities that participated in both phases of the research project. The majority of students who were involved in the study have since graduated and the researcher no longer has contact with them. However, a copy of the results will be sent by electronic mail to one of the students, who will be asked to forward it to the participating classmates with whom he has contact.

"Assessing the need for change in clinical education practices" has been published in Physical Therapy, as noted in Chapter 2. The final two articles will be submitted for publication within six weeks of completion of the thesis requirements. Chapter 3 will be submitted to Physical Therapy and Chapter 4 will be submitted to Qualitative Health Research.

Future research

Both qualitative and quantitative research could address needs for future research in the area of learning relationships. Further qualitative research could be used to develop the "building colleagues" model into a truly grounded theory. This would require research in diverse clinical, geographic and health care contexts. Learning outcomes could be further explored, particularly the long-term effects of developing or failing to develop learning confidence. Effects of students' clinical education experiences on the development of future professional relationships could be explored. The perspectives of team members and of clients and their families could be valuable in better understanding and evaluating the effects of clinical education learning relationships as well as possible parallels in professional and therapeutic relationships. Quantitative

research could be used to develop evaluation tools for sites and for learning outcomes; to establish generalizability of aspects of the model through using large random samples; and to explore aspects of time such as proportions of 'being there' and 'sitting down' throughout placements. Diverse approaches to research in clinical education will help increase understanding of the goals, processes and outcomes of this foundational component of professional education in physical therapy.

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APPENDIX A

FOCUS GROUP QUESTIONS

(NOTE: Probes will be used throughout the session. These include such questions as "Could you explain what you mean? Would you tell us more? Is there anything else?)

1. I'd like you to remember back to your most positive clinical education experience… [*clinical educators*: …in which you were the clinical educator, not the student.] Write out the five most important factors that contributed to a positive learning environment. Try to think of concrete examples to illustrate your points.

(This should take about 4 minutes.)

2. Now identify the two most important points from your list. Could each of you share these with the rest of the group? (I will probe for specific examples.)

3. Still thinking about this placement, how would you describe your role and that of your student/clinical educator throughout the placement? If you can, think of a metaphor that would capture your roles. If you can't, simply describe them. If the roles changed over time, please include this in your description.

(An example of a metaphor will be provided if people are unclear: "Life is a bowl of cherries.")

4. Can you think of ways this positive experience affected or changed you?

5. Now think of one of your least positive clinical education experiences. Write out the five most significant factors that detracted from the learning environment. I'd like you to think of specific examples for these as well. When you are finished we will again discuss your two most important points.

6. How would you describe your role and that of your student/clinical educator through the course of this placement? Again, you can use either a metaphor or a description.

7. Okay, now I'd like you think more generally about the whole clinical education process. What are the most important skills and attitudes that students should come away with as a result of their clinical education experiences?

(These will be listed on a flip chart.)

8. In your experience, have you used any approaches or processes that seem particularly effective in developing each of these skills and attitudes? (*For clarification, if necessary*: These could include specific tools like a learning contract, a model of clinical

education like a 2:1 placement, a specific approach to supervision or anything else you know to be effective.)

(These will be added to the flip chart.)

9. What are some barriers that prevent development of these skills and attitudes?

(These will be added to the flip chart.)

10. Is there anything you would like to add to this discussion? Are there any important factors from your lists that were not discussed but should be?

11. Thinking back over the whole focus group session, what were the highlights of the discussion?

APPENDIX B

CONDITIONS AFFECTING LEARNING RELATIONSHIPS

Experience

Age: Older, more mature students may be given more trust and responsibility. Older therapists may be perceived as more flexible and easy-going. Younger therapists supervising older students may feel insecure and uncertain, may have less to offer, or may be better able to understand the student.

Culture: Cultural differences may create difficulties with communication and expectations.

Personal and professional experiences: Experience affects the development of various skills and strengths, insecurities and fears that may affect the learning relationship. Professional experiences include participants' previous experiences with clinical education and the professional experience of the therapist

Level of student in the program: Educational level influences expectations of therapist and student

Personal factors

Gender: Different combinations of genders may produce variable responses. There is a disproportionately large number of male students identified as arrogant.

Flexibility: There is variable willingness to work under various work and supervisory conditions with different personality types.

Motivation: Therapists have different reasons for taking students: enthusiasm, guilt, wanting a student to do their work. Students' enthusiasm for the area of placement ranges from enthusiasm to indifference.

Learning style: Different combinations of learning styles facilitate or inhibite communication and the student's learning.

Site

Caseload: The size, diversity and complexity of the caseload impacts the time available for treatment and dialogue and determines exposure to different conditions, treatment approaches and possibilities for matching the student with appropriate clients.

Time: Time available is partially determined by time management of student and therapist. Time affects possibilities for being there and sitting down

Teamwork: The attitudes and involvement of other team members impact on the student's opportunities for developing interdependence and holistic learning.

Morale: The general atmosphere at the worksite may range from fun to depressing.

Educational program

Approach to learning and teaching: This involves the program's emphasis on active or on passive learning and its effectiveness in helping students connect theory and practice during the academic phases of education.

Communication of expectations: The expectations of students and therapists are influenced by the academic program's communication of expectations for the processes and outcomes of clinical education

Support of the CE process: This includes the communication and interaction between the school, students and clinical educators prior to and during placements

APPENDIX C: EXAMPLES OF ANALYSIS

Attitude (causal condition)

Quote	Code	Category
[Students] shouldn't be afraid to express an opinion. And if you can get through to them right off the bat…the reasons for the placement, and that there really are no wrong answers as long as they're not going to kill any of my patients, then they do fine. (Therapist, focus group).	Expectations/active learning	Attitude
Because I was learning from [the students] as well. I mean it was a balance board. Sometimes they were the learners, sometimes I was. (Therapist, focus group).	Expectations/mutual learning	Attitude
I think the gaps in [the student's] learning are just due to inexperience, and she needs more classroom time and she needs more clinical time. So I think the gaps will be filled, I just don't think it's our role to fill them at this point. (Therapist, observation).	Expectations/level	Attitude
But it's more a learning situation. You need to learn from this placement. You need to put the university-based stuff into practice. And I don't expect you to know everything. That's what your books are for. You know, ask me questions. If you don't know the answer, just say "I don't know" and I'll either drag it out of you or make you go look it up. (Therapist, focus group).	Expectations/theory to practice	Attitude
Part of me feels like I've got the rest of my career to learn how to be independent. While I'm here in this five weeks I want to learn as much as I can from you and the people around you…I do want to practice my own skills but I want to gain what I can from you while I have the time, because really no other time in your career do you have to look over someone's shoulder and ask questions. (Student, focus group).	Expectations/interdependence	Attitude

Being There (Action/interaction)

Quote	Code	Category
My goal is independence for the student, but if I just sit down here and get you to drop off your stats at the end of the day I don't think you'd advance to the next level. (Therapist, interview).	Active learning	Being there
For one of the measurements, [the therapist] offers to stabilize the patient's pelvis. She instructs the patient "Hold right there." She instructs [the student] "Measure there"… She verbally directs the position and measurement technique. The patient does the movement, [the therapist] says "Whoa!! That's within normal! Measure it though. Usually I would just say 'within normal limits' for that, but if we're measuring it I would do it like this." (Observation).	Teaching	Being there
[The therapist] watches for a short while, the patient seems uncomfortable and a bit unstable. She jumps back down from the mat. "Can I try something – it'll just be a hand-hold thing." She steps in to do the movement with the patient, [the student] moves back. This seems to be effective, so [the therapist] says to [the student], "All right, so you're going to come in and take my place." (Observation).	Trading places	Being there
She forgot to keep the ultrasound head moving while she was turning it up, I'm like "God, keep moving!" Grabbed her hand, all right, here we go, cause like I'm responsible for that burn if it happens. (Therapist, interview)	Ensuring safety	Being there
I'm going to back off because (the patient) is looking at me too much – he's not listening to [the student]. They do that… (she goes across the room to the doorway and listens from there. When [the student] finishes and comes out of the room she explains why she left). (Therapist, observation)	Stepping back, rapport	Being there
Initially, like the first couple of days, [the therapist] was [there]. And then she would be at the end of the bed, and then she would be at the door of the room, and then she would be gone and doing her own thing. And that's, for me that's a nice progression and the way she did it seemed almost seamless. She just recognized when I was able to start getting in and she put more onus on me by doing that. (Student, interview)	Stepping back, stepping out	Being there

Sitting Down (Action/interaction)

Quote	Code	Category
…one of the things that I've really appreciated about her is that she's open with suggestions and her attitude, as far as her tone of voice and her body language, is very open and not condescending or closed. (Student, interview)	Being open	Sitting down
I think that what's outstanding with [the student] is that there's no covering up. You know, he'll say, "I don't think that I do [this] very well." I think he does [it] just fine, you know. But…he wouldn't be falsely positive and say "Oh yeah, I'm doing great!" (Therapist, interview)	Being honest	Sitting down
…if you run into something you don't know, be honest, say "I don't know, but I'll do my best to find out." That's actually something, my student right now said to me, "You mean you tell them that you don't know?" And I'm like "Well, it's a lot better to tell them I don't know than to tell them I do and then get caught lying!" (Therapist, focus group).	Not knowing	Sitting down
I think, all students, is they want "Am I on the right track here?" and that's important for us as supervisors…not to sort of withhold that affirmation. (Therapist, interview).	Giving feedback	Sitting down
People hate evaluations, you know, and I take great pains to say "You are going to know everything that's going to be on that evaluation before you sit down there. You know everything that I have to say" …You know, and there shouldn't be secrets or surprises and, you know, "I've noticed this and so I wanted to bring this up now," what's that? (Therapist, interview).	Evaluating, no surprises	Sitting down
I ask more questions – not like the bullet questions that make you cry… what I really want is to see if her line of thought is safe, on the right track theoretically and anatomically. (Therapist, interview).	Questioning	Sitting down
One of the big things I would do is I would go home and on the way home I would kind of visualize how I did with my patients, to facilitate my learning. I would evaluate how I felt it went in the room with the patient and what I saw, and the I would give a few minutes and just think about what I might do differently the next day, or even give myself a pat on the back and say "Hey, that went better than I thought it was going to go!" (Student, interview).	Reflecting, going home	Sitting down

Roles (Action/interaction)

Quote	Code	Category
I'm a student and I'm there for exposure and for practice. [The therapist's] there to give me the information I need and to guide me and to keep her eye on me. (Student, interview)	Student/teacher	Roles
Therapist tells student what the patient will do, student tells the patient. Therapist stands close as they begin, watches for several repetitions, then moves in and stabilizes the patient's pelvis... She asks student, "Was that pure hip flexion or was it circumduction?" They discuss the movement once the patient has done several repetitions. (Observation).	Student/teacher	Roles
Students are like sponges and they kind of absorb as much as they can. So the more that's sort of thrown at you, the better it is. (Therapist, focus group).	Student	Roles
she'll put me in situations to try and make me think. (Student, interview)	Teacher, active learning	Roles
Student addresses therapist, "Could you get us an oximeter please?" "You bet." Therapist immediately leaves to get this. When she returns, student measures and reports…to therapist and family. Both therapist and student briefly teach the family about these levels… student indicates clipboard on the wall, therapist gets it, they look through it together and discuss it. (Observation).	Helper	Roles
Yeah, so things certainly changed from there being direction and instruction and demonstration to them just giving it back to you. "This is what I'm seeing, they shouldn't be doing it like that, they should do it like this" and just the confidence and the knowledge base and the comfort, you know, with being able to know how things should be done, who's going to be done first, who's appropriate, who can wait, who he can delegate. Just, it's all there. He is like an entry-level colleague. The communication is like "What's your day like today?" "Oh, you know I've got, I've got a real busy day, I've got, you know, three new patients." "Well let me know if you need some help." "Okay I'll let you know." Just like a colleague. (Therapist, interview).	Colleague	Roles
Well I guess I'm more of a mentor. I'm a resource so that if he has a question or, you know, needs to sort of have somebody to talk to, to decide what he wants to do. I'm not making a decision, I'm just the sounding board. (Therapist, interview).	Mentor	Roles

Confidence (Consequence)

Quote	Code	Category
I think the most confidence was in the fact that I could back up what I was doing, you know, like my therapist was asking me questions about why I was doing this, and why I was doing that and I felt that the confidence came from being able to rationalize everything that I was doing and I felt that I could treat my patients because of that.	Confidence in knowing	Confidence
I think probably for me, one of my most rewarding was bringing a second year student with lots of textbook knowledge, that was absolutely petrified. And through the course of the six weeks that we had her, watching her develop the people side of her profession, and watching that light bulb kind of go on higher and higher and higher as she realized that she could apply the clinical knowledge, but also how much she was enjoying learning what the profession actually was. (Therapist, focus group).	Confidence applying theory to practice	Confidence
So I see that with [the student], he wants to know everything, he knows he doesn't know everything, and he wants to learn and he wants to try and that's confidence. (Therapist, interview)	Confidence in learning	Confidence
And it was very positive when I felt part of the team versus just feeling like a student there. It did a lot for self-confidence, knowing that my supervisor trusted me enough to sort of let me go and do my own stuff there. (Student, focus group).	Confidence in the relationship	Confidence
Because she came out and said "You can do this, I know you can, you don't need me here anymore." Which helped me to say to myself "Okay, well I'm not just 'the student' that's here in the room, but I'm actually competent, I can be confident in my abilities as far as my knowledge goes, as far as what I know how to do, but I also felt like it was a situation where she was able to help guide me through. (Student, interview).	Confidence from stepping back	Confidence
Confidence in myself. But also in our profession. You kind of go through the four years and you kind of come out and a lot of it's kind of sketchy. Like, are we really helping people, or would they just be getting better if we weren't even doing anything? But I saw in this placement that what we were doing was helping people, and making a difference in peoples' lives. And so I came away feeling very much like I did choose the right profession. (Student, focus group).	Confidence in the profession	Confidence